सत्यमेव जयते

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# Government of Maharashtra Water Resources Department Annual Dam Health Status Report 2021-22 (Marathwada Region)



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जलसंपदा विभाग Government Of Maharashtra Water Resources Department अधीक्षक अभियंता, धरण सुरक्षितता संघटना, दिंडोंरी मार्ग, नाशिक - ४२२ ००४. दूरध्वनी (ऑ.): ०२५३ - २५३००३० फॅक्स : ०२५३ - २५३००३०. ई-मेल : se.damsafety@gmail.com

दिनांक : १९/१० /२०२२

जा.क.धसुविक.१/ध.स्थि.अ.(पु) २०२१-२२ / १३६९ /२०२२ ई-मेल व्यारे

मा. कार्यकारी संचालक, गोदावरी मराठवाडा विकास महामंडळ, सिंचन भवन, जालना रोड, आकाशवाणी केंद्राच्या बाजूला, औरंगाबाद-४३१००५

# विषय :- धरणं स्थिती अहवाल २०२१-२२ (मराठवाडा प्रदेश)

संदर्भ :- १) शासन, पाटबंधारे विभागाचे पत्र क्र .पा .वि.१०७७ / २४०२/ १८६७/२ दिनांक- १९/०१/१९८२

२) शासन ,जलसंपदा विभागाचे पत्र क्र. संकीर्ण २०१४ /(२२०/२०१४)/सिं.व्य. (कामे) दि. ९/१०/२०१५

संदर्भिय शासन पत्र क्र. १ अन्वये आपले अधिनस्त अधीक्षक अभियंता व कार्यकारी अभियंत्याकडून या कार्यालयास प्राप्त झालेल्या उत्तर महाराष्ट्र प्रदेशातील पर्जन्य पूर्व व पर्जन्य उत्तर २०२१-२२ धरण निरिक्षण अहवालांची छाननी तसेच धरण सुरक्षितता संघटनेकडुन करण्यात आलेल्या Test Inspection नुसार सन २०२१-२२ वर्षाचा धरण स्थिती अहवाल संदर्भ पत्र क्र. २ अन्वये प्राप्त निर्देशा नुसार मा. महासंचालक, संप्रजसंवसु, मेरी, नाशिक यांचेकडुन प्रकाशित करण्यात आलेला आहे.

मा. महासंचालक, संप्रजसंवसु, मेरी, नाशिक यांचे निर्देशानुसार

१) उपरोक्त प्रकाशीत धरण स्थिती अहवालातील प्रस्तावनेच्या अनुषंगाने मुद्येनिहाय अनुपालन अहवाल या कार्यालयास पाठविण्याचे निर्देश संबंधित अधीक्षक अभियंता यांना आपल्या स्तरावरुन देण्यात यावेत ही विनंती.

२) सदरचा अहवाल दरवर्षी एप्रिल महिन्यात प्रकाशीत करण्यासंबंधी धरण सुरक्षा देखरेख संचालनालय, केंद्रिय जल आयोग, नवी दिल्ली यांचे निर्देश आहेत. तथापि संबंधित अधीक्षक अभियंता व कार्यकारी अभियंता यांच्याकडुन पर्जन्य पुर्व व पर्जन्योत्तर पाहणी अहवाल तसेच अधीक्षक अभियंता मार्फत प्राप्त होणारे त्रुटी पुर्तता अहवाल विहीत कालावधीत प्राप्त होत नसल्याने सदरचा धरण स्थिती अहवाल प्रकाशीत करण्यास विलंब झालेला आहे. यास्तव पाहणी व त्रुटी पुर्तता अहवाल विहीत कालावधीत कालावधीत पाठविण्यात यावेत. याबाबत आपल्या स्तरावरुन संबंधित अधीक्षक अभियंता यांना निर्देश देण्याची विनंती आहे.

३) महामंडळ स्तरावरुन त्रुटी दूर करण्यासाठी आवश्यक निधी उपलब्ध करुन देण्याची ंव आवश्यकतेनुरुप सनियंत्रण करण्याची विनंती आहे. जेणेकरुन धरण सुरक्षित ठेवण्यास मदत होईल.

४) शासन निर्णय संकीर्ण. २०१६ (८८/१६)) / आयएम (डब्ल्यू) दि.९/५/२०१६, नुसार पुढील कार्यवाही करण्यात यावी हि विनंती.

५) धरण तपासणी अहवालातील त्रुटीचा पुर्तता अहवाल व पर्जन्य पुर्व व पर्जन्योत्तर पाहणी अहवाल विहीत कालावधीत धरण सुरक्षितता संघटना, नाशिक येथे प्राप्त होणेच्या अनुषंगाने संबंधित अधीक्षक अभियंता (वर्ग-१ धरणांसाठी) व कार्यकारी अभियंता (वर्ग-२ धरणांसाठी) यांना आपल्या स्तरावरुन कळविण्यात यावे ही विनंती.

६) मराठवाडा विभागाचा एकत्रित धरणस्थिती अहवाल - २०२१-२२ चे अवलोकन केले असतां वर्ग १ च्या ०८ धरणांचा व वर्ग-२ च्या ११ धरणांचा पर्जन्य पूर्व २०२२ धरण निरिक्षण अहवाल प्राप्त झालेला नाही, तसेच वर्ग १ च्या १३ धरणांचा व वर्ग-२ च्या ५३ धरणांचा पर्जन्य उत्तर धरण निरिक्षण अहवाल प्राप्त झालेला नाही ७) मा. महासंचालक मेरी, नाशिक यांचे वर्ग-१ व वर्ग-२ धरणांचे पर्जन्य पुर्व व उत्तर तपासणी अहवालासोबत धरणांवरील विशेष त्रुटीबाबतचे प्रपत्र (संदर्भ परिच्छेद क्र. १.११) तांत्रिक परिपत्रक जा. क्र. सं.प्र.ज.सं व सु/म अ सं सं/प्रशा/अधि/८८/सन २०२०, दि. २१/७/२०२० सादर करण्याबाबत सर्व संबंधीतांना आपले स्तरावर सूचना देण्यात याव्यात ही विनंती.

8) दि. 30/12/2021 पासुन संपूर्ण देशात धरण सुरक्षा कायदा-2021 लागू करण्यात आला आहे. सदर कायदयाच्या पार्श्वभूमिवर राज्यातील वर्ग-1 व वर्ग-2 धरणांचे पावसाळापुर्व व पावसाळोत्तर तेपासणी अहवाल व त्रुटीचा पुर्तता अहवाल वेळेत सादर करण्याचे निर्देश संबंधित अधीक्षक अधियंता यांना आपल्या स्तरावरुन देण्यात यावेत ही विनंती. जेणेकरुन पणे विभागाचा एकत्रित धरणस्थिती अहवाल वेळेत प्रकाशित करणे सोयीचे होईल.

हे आपले माहितीस्तव व पुढील कार्यवाहीसाठी सादर.

सहपत्र : धरण स्थिती अहवाल २०२१-२२ (मराठवाडा प्रदेश)



#### प्रत -

१. मा. सचिव (जसंव्य व लाक्षेवि), जलसंपदा विभाग, मंत्रालय, मुंबई-३२ यांना अहवालासह माहितीस्तव सादर. २. मा. महासंचालक, संकल्पन, प्रशिक्षण, जलविज्ञान, संशोधन व सुरक्षितता, मेरी, नासिक यांना अहवालासह माहितीस्तव सादर.

- ३. मा.मुख्य अभियंता, जलविज्ञान व धरण सुरक्षितता, नाशिक यांना अहवालासह माहितीकरीता सादर.
- ४. मा.मुख्य अभियंता, (यांत्रिकी ), त्रंबक रोड , नाशिक
- ५. मा. मुख्य अभियंता व मुख्य प्रशासक, लाभक्षेत्र विकास प्राधिकरण, सिंचन भवन, गारखेडा परिसर, औरंगाबाद.-४३१००५
- ६. मा. मुख्य अभियंता, जलसंपदा विभाग, सिंचन भवन,आकाशवाणी जवळ, जालना रोड, औरंगाबाद- ४३१००५
- ७. मा. आयुक्त, महानगरपालिका, औरंगाबाद.
- ८. मुख्य कार्यकारी अधिकारी, नगरपरिषद जालना.
- ९. मुख्य कार्यकारी अधिकारी, नगरपरिषद उदगीर, जि. लातूर.
  - यांना अहवालासह माहितीसाठी सादर.

#### सहपत्र- प्रत्येकी अहवालाची एक प्रत.

#### प्रत -

- १. उपसचिव (सिंचन व्यवस्थापन),जलसंपदा विभाग, मंत्रालय, मुंबई-३२
- २. अधीक्षक अभियंता, (धरण), मध्यवर्ती संकल्पचित्र संघटना, दिंडोरी रोड, नाशिक ४२२००४.
- ३. अधीक्षक अभियंता, (दरवाजे), मध्यवर्ती संकल्पचित्र संघटना, दिंडोरी रोड, नाशिक ४२२००४.
- ४. अधीक्षक अभियंता, (यांत्रिकी ), (द्वार निरीक्षण समन्वय अधिकारी), यांत्रिकी मंडळ, नाशिक
- ५. अधीक्षक अभियंता व प्रशासक, लाभक्षेत्र विकास प्राधिकरण, गारखेडा परिसर, औरंगाबाद.- ४३१००५
- ६. अधीक्षक अभियंता व प्रशासक, लाभक्षेत्र विकास प्राधिकरण, जायकवाडी वसाहत, नगर रोड, बीड.
- ७. अधीक्षक अभियंता, बीड पाटबंधारे प्रकल्प मंडळ, सिंचन भवन, अंबेजोगाई रोड,परळी वैजनाथ, जि.बीड.
- ८. अधीक्षक अभियंता, औरंगाबाद पाटबंधारे प्रकल्प मंडळ, जुन्या हायकोर्टाच्या पाठीमागे,
  - अदालत रोड ,स्नेहनगर , औरंगाबाद -४३१००५.
- ९. अधीक्षक अभियंता, नांदेड पाटबंधारे मंडळ, सिंचन भवन, नांदेड -४३१६०५.
- १०. अधीक्षक अभियंता व प्रशासक, लाभक्षेत्र विकास प्राधिकरण, लातूर.

यांचे माहितीसाठी व पुढील योग्य त्या कार्यवाही साठी अहवालासह सस्नेह अग्रेषित.

#### सहपत्र :- प्रत्येकी अहवालाची एक प्रत.

# यांना माहितीसाठी व पुढील योग्य त्या कार्यवाहीसाठी अहवालासह सस्नेह अग्रेषित.

२/- कृपया वरील अहवालाची प्रत मिळाल्याची पोहच या कार्यालयास पाठवावी हि विनंती.

१. कार्यकारी अभियंता, जायकवाडी पाटबंधारे विभाग, नाथनगर (उत्तर) पैठण ,जि.औरंगाबाद.

२. कार्यकारी अभियंता, औरंगाबाद पाटबंधारे विभाग, औरंगाबाद .

३. कार्यकारी अभियंता, लातूर पाटबंधारे विभाग क्रं.२ लातूर

४ कार्यकारी अभियंता, जायकवाडी पाटबंधारे विभाग क्रं.३,बीड

५ कार्यकारी अभियंता, माजलगांव पाटबंधारे विभाग, परळी वैजनाथ, जि.बीड.

६. कार्यकारी अभियंता, उस्मानाबाद पाटबंधारे विभाग-१, उस्मानाबाद

७.कार्यकारी अभियंता, उस्मानाबाद पाटबंधारे विभाग-२, उमरगा, जि. उस्मानाबाद

८. कार्यकारी अभियंता,बीड लघु पाटबंधारे विभाग, अंबाजोगाई,, जि.बीड.

९. कार्यकारी अभियंता, लघु पाटबंधारे विभाग, लातूर

१०. कार्यकारी अभियंता, मध्यम प्रकल्प विभाग, लातूर

११.कार्यकारी अभियंता, लघु पाटबंधारे विभाग क्रं.१ ,औरंगाबाद..

१२.कार्यकारी अभियंता, उर्ध्व पेनगंगा प्रकल्प विभाग क्रं. १ ,नांदेड

१३.कार्यकारी अभियंता, नांदेड पाटबंधारे विभाग (उत्तर),नांदेड .

१४. कार्यकारी अभियंता, नांदेड पाटबंधारे विभाग (दक्षिण),नांदेड .

१५.कार्यकारी अभियंता, नांदेड मध्यम प्रकल्प विभाग, नांदेड.

१६.कार्यकारी अभियंता, लघु पाटबंधारे विभाग, नांदेड

१७.कार्यकारी अभियंता, पूर्णा पाटबंधारे विभाग , बसमतनगर ,जि. हिंगोली

१८.कार्यकारी अभियंता, जायकवाडी पाटबंधारे विभाग क्रं.२ परभणी

१९.कार्यकारी अभियंता, जालना पाटबंधारे विभाग, जालना

२०. कार्यकारी अभियंता, लातूर पाटबंधारे विभाग क्रं.१ लातूर

२१. कार्यकारी अभियंता, नांदूर मध्यमेश्वर पाटबंधारे वाभाग, वैजापूर, जि. औरंगाबाद

२२. कार्यकारी अभियंता, बीड पाटबंधारे विभाग, बीड

२३. कार्यकारी अभियंता, लेंडी प्रकल्प विभाग, देगलूर जि. लातूर

२४. कार्यकारी अभियंता, जालना लघु पाटबंधारे विभाग, जालना

२५.कार्यकारी अभियंता, पाणी पुरवठा विभाग,महानगरपालिका औरंगाबाद.

२६.कार्यकारी अभियंता, पाणी पुरवठा विभाग, नगर परिषद, जालना.

२७.कार्यकारी अभियंता, पाणी पुरवठा विभाग, नगर परिषद, उदगीर.

दोष व त्रुटी बद्दल त्वरीत कार्यवाही करुन अनुपालन/पुर्तता अहवाल या कार्यालयास त्वरीत पाठवावा ही विनंती.

२/- सदर अहवालाची प्रत मंडळ कार्यालयाकडून प्राप्त करुन घ्यावी.

प्रत - कार्यकारी अभियंता, धरण सुरक्षा विभाग क्र. १/२, कालवा सुरक्षा विभाग,दिंडोरी रोड, नाशिक ४ प्रत- संशोधन अधिकारी, उपकरणे संशोधन विभाग, धरण सुरक्षितता संघटना, नाशिक ४ यांना माहितीसाठी अग्रेषित.

सहपत्र :- प्रत्येकी अहवालाची एक प्रत.

प्रत- ग्रंथालय, धरण सुरक्षा विभाग क्र. ३, नाशिक सहपत्र :- अहवालाची दोन प्रती

प्रत - ग्रंथालय, मध्यवर्ती संकल्पचित्र संघटना, नाशिक सहपत्र :- अहवालाची एक प्रत.

## FOREWORD

- 1.0 Annual Dam Health Status Report (ADHSR) 2021-22 of Class-I & Class-II Dams in Marathwada Region is prepared based on the Inspection Reports (Pre and Post Monsoon 2021) received from field offices and test inspections carried out by Dam Safety Organisation (DSO), Nashik during Year 2021-22. The period of the report is from April 2021 to March 2022.
- 2.0 This Report comprises of following Parts.

Part	Description
Part-1	General Information
Part-2	Action Taken Report (ATR)
Part-3	Annual Dam Health Status Report (ADHSR) of Pre & Post Monsoon 2021
Part-4	Annual Performance Report of Dam Instruments
Part-5	Annual Performance Report of Meteorological Instruments
Part-6	National Committee on Dam Safety (NCDS) Documents
Part-7	Dam Health and Rehabilitation Monitoring Application (DHARMA)
Part-8	Health Status of Gated Dam (As per Mechanical Organisation)
D 4 0	

Part-1 & Part-6 to 8 are envisaged by DSO, Nashik & Part-2 to 5 are in the format provided by Dam Safety Monitoring Directorate, Central Water Commission, New Delhi vide letter No. 3/19/NCDS/HS/DSM/2001/627-56 Dated 28/08/2002.

- 2.1 Part-1: Covers General Information viz. Time schedule of Inspection, Classification of Dams, Inspection Authorities, Preparation of ADHSR for Class-I & Class-II Dams, Categorization and Standardization of Deficiencies, NRLD updation, which will be helpful to field officers. Inspecting officers are requested to follow the suggestion given in 'Part-1' while carrying out forthcoming Pre/Post Monsoon inspections of dams.
- 2.2 Part-2: Covers Action Taken Report (ATR) on Deficiencies pointed out in last Year ADHSR 2020-21 & Status of poor efforts taken by field office.
- 2.3 Part-3: Covers condensed summary of Dam deficiencies noticed during inspection carried out by field officer and Dam safety Organisation in the Year 2021-22.
- 2.4 Part-4: Covers details of Instrumentation provided in or on Dams & its Functionality. Prepared by Instrumentation and Research Division, Nashik.
- 2.5 Part-5: Covers details of Metrological Instrumentation provided at Dam Site & its Functionality. Prepared by Instrumentation and Research Division, Nashik.
- 2.6 Part-6: Covers status of Documents (EAP, ROS & GOS, Data Book, O & M Manual, Record Drawing, Completion Report) recommended by National Committee on Dam Safety.
- 2.7 Part-7: Covers Progress of updation of Dam Information filled in DHARMA Web Portal.
- 2.8 Part-8: Covers over overall Health Status Gated Dam in ADHSR- 2021-22 of Mechanical Organisation.
- 3.0 This report covers Dam Health Status of 37 Class-I & 243 Class-II Dams owned by WRD and Also covers 0 Class-I & 4 Class-II Private Owned Dams inspected by DSO twice in the year.
- 4.0. There are total 284 Dams in this Region. Out of 568 expected Inspection Reports, this ADHSR is based on 487 Inspection Reports received in DSO, Nashik.

Dam Owner	Expected Inspection Report in DSO			Inspection Report Received in DSO			Inspection Report Not Received in DSO		
	Class I	Class II	Total	Class I	Class II	Total	Class I	Class II	Total
WRD	74	486	560	53	422	475	21	64	85
Private	0	8	8	0	4	4	0	4	4
Total	74	494	568	53	426	479	21	68	89

#### Status of Dam inspection during 2021-22 (Ref. Table- 3.1 & 3.3)

## Dams having Deficiencies

		No. of Dams								
Dam owner	Year	Class o	of Dam		Clas	s-I dams ha Deficiencies	iving s	Clas	s-II dams h Deficiencies	aving s
		Ι	II	Total	Cat-I	Cat-II	Cat-III	Cat-I	Cat-II	Cat-III
W.R.D	2020-21	37	243	280	0	05	29	0	31	237
	2021-22	37	243	280	0	05	37	0	23	234
Private	2020-21	0	04	04	0	0	0	0	04	04
	2021-22	0	04	04	0	0	0	0	04	04
Total	2020-21	37	247	284	0	05	26	0	31	04
	2021-22	37	247	284	0	05	37	0	27	238

### Category wise Deficiencies

(Ref. Table- 3.7)										
		No. of Deficiencies								
Dam	Voor	Category-1				Category-2		Category-3		
owner	i ear	Cl	ass		Cl	ass		Cl	ass	
		Ι	II	Total	Ι	II	Total	Ι	II	Total
WDD	2020-21	0	0	0	19	83	102	281	952	1233
w.R.D	2021-22	0	0	0	58	80	112	431	1211	1642
Driveto	2020-21	0	0	0	0	14	14	0	33	33
Private	2021-22	0	0	0	0	10	14	0	61	61
Total	2020-21	0	0	0	0	0	116	281	985	1266
	2021-22	0	0	0	58	90	148	431	1272	1703

				Nur	nber of Deficier	ncies
	Year	Number of			Category	
Dam		Gated	No. of dams	Catagory 1	Catagory 2	Catagory 3
Owner		Dams	inspected	Category-1	Category-2	Category-5
	2020-21	54	48	0	490	2786
W.R.D	2021-22	54	44	0	681	3084
	2020-21	04	03	0	81	64
Private	2021-22	04	03	0	0	0
	2020-21	58	51	0	571	2850
Total	2021-22	58	47	0	681	3084

Deficiencies in Gated Dams (Class-I) (As per Mechanical Organization) (Ref. Table- 8.1)

- 5.0: The responsibility of Health and Safety Monitoring of Class-III dams lies with the respective Chief Engineers. Hence for Class-III Dams based on periodical inspection reports, Annual Dam Health Status Report should be prepared & published by concerned Field Chief Engineers with submission to Government & forwarded to DSO, Nashik for record.
- 6.0: The deficiencies shown in the present report are based on the Pre/ Post Monsoon Inspections of the Dams carried out by the field officers and reports of them received by this organization. As such, the deficiencies and action taken thereof is the sole responsibility of the field officers.

7.0 Conclusions :

Government Owned Class-I Dams :

- 7.01 : Category-1 Deficiency is Not noticed in all 37 Dams.
- 7.02 : 24 No. of Category-2 Deficiencies in 5 out of total 37 No. of Dams are noticed.
- 7.03 : 431 No. of Category-3 Deficiencies in total 37 Dams are noticed.
- 7.04: Out of ATR expected for 19 No. of Category-2 Deficiencies, No field action is noticed for removal of Deficiencies.

Government Owned Class-II Dams :

- 7.05: Category-1 Deficiency is Not noticed in all 234 Dams.
- 7.06: 90 No. of Category-2 Deficiencies in 23 out of total 234 No. of Dams are noticed.
- 7.07: 1703 No. of Category-3 Deficiencies in total 234 Dams are noticed.
- 7.08: Out of ATR expected for 88 No. of Category-2 Deficiencies, field action for removal of Deficiencies is noticed for 2 Deficiencies only.

Private Owned Class-I Dams :

- 7.09: Category-1 Deficiency is Not noticed in any Dam.
- 7.10 : Category-2 Deficiencies is Not noticed in any Dam.
- 7.11 : Category-3 Deficiencies is Not noticed in any Dam.
- 7.12:Out of ATR expected for 5 No. of Category-2 Deficiencies, No field action is noticed for removal of Deficiencies.

Private Owned Class-II Dams :

- 7.13:Category-1 Deficiency is Not noticed in all any Dams.
- 7.14 : 10 No. of Category-2 Deficiencies in total 4 Dams are noticed.
- 7.15 : 61 No. of Category-3 Deficiencies in total 4 Dams are noticed.
- 7.16 : Out of ATR expected for 14 No. of Category-2 Deficiencies, No field action is noticed for removal of Deficiencies.
- 8. Points of Attention:
  - 8.01: It is mandatory that Pre Monsoon Inspection Report must be submitted to DSO, Nashik by 30<sup>th</sup>June & Post Monsoon Inspection Report must be submitted to DSO, Nashik by 31<sup>st</sup>December every Year.
  - 8.02: As per Dam Safety Monitoring Directorate, Central Water Commission, New Delhi Annual Dam Health Status Report (ADHSR) must be submitted in the month April every Year.
  - 8.03: It is pointed out that only 68 (12.14 %) Pre & Post Monsoon Reports out of 560 Pre & Post Monsoon Reports are received in stipulated period.

407 (72.67 %) Pre & Post Monsoon Reports are received out of 560 Pre & Post Monsoon Reports after rigorous follow up by DSO officials & 85 (15.17 %) reports out of 560 Pre & Post Monsoon Reports were not received at all. All field officers & Higher Authorities shall take serious note of this in light of enactment of Dam Safety Act 2021.

- 8.04: ATR expected for 36 No. of Dams (107 Cat-2 Deficiencies). However ATR was not received from any dam i.e. only 0.00 % of Cat-2 Deficiencies fully addressed.
- 8.05: Concerned Chief Engineer should monitor and instruct field Superintending Engineer & Executive Engineer regarding submission of ATR to DSO, Nashik to reflect exact status of Dam Safety works.
- 8.06: The Chief Engineers should compel all Superintending Engineer & Executive Engineer of concerned Dams to carry out periodic inspections and submit report to D.S.O. in time. Brain storming of field officer regarding Dam Safety aspect is must otherwise the whole exercise done by Dam Safety Organisation tends to become futile.

- 8.07: In case of Mechanical Organisation inspections, Out of ATR expected for 33 No. of Category-2 Deficiencies, No Action Taken Report (ATR) from field for removal of Deficiencies.
- 8.08: Earthen dam uprooting of trees & shrubs grown on embankment of Dam follow CWC guidelines for safety of dams 2018.

8.09: Review of a need for painting of Gates & structural parts to avoid further deterioration in consultation with Mechanical orgnisation.

- 8.10: Being the dam owner, safety of the dam is the prime responsibility of the concerned field Executive Engineer. In order to ensure safety of dam/dams in his jurisdiction, he shall initiate The procedures for removal of deficiencies noticed in the Pre-Post Monsoon Inspection as well as pointed out in this ADHSR by following due procedure of approval.
- 8.11: Higher authorities i.e. Superintending Engineer and Chief Engineer shall accord timely sanction to most economical and sustainable technical work required for Deficiency removal.
- 8.12: As per Marathi Government Resolution Misc. 2016/(88/16)/IM(W) Dtd.- 09/05/2016, Responsibility of Approval of M & R Work's Procurement List & Prioritization of execution of work & its implementation is entrusted to Superintending Engineers. And Responsibility of Review & monitoring is entrusted to Chief Engineers.
- 8.13: Hence, It is expected that Superintending Engineers should verify whether Works of removal of Deficiencies are proposed to address Deficiencies pointed in ADHSR while approving Procurement List of the M & R works of the Project.
- 8.14:Gist of report is that though inspection of Dams are carried out & Reports are published however status of ATR depict that despite of M & R expenditure extreme poor performance of removal deficiency is observed. Field officers should take serious note of this.
- 8.15: Central Government has enacted Dam Safety Act 2021 from date 30/12/2021 to provide for surveillance, Inspection, Operation & Maintenance of the specified dam for prevention of dam failure disaster & to provide for institutional mechanism to ensure their safe functioning & for matters connected therewith or incidental thereto So that Dam owner shall give specific attention for implementation of Dam Safety Act 2021.

I hope this report will serve desired expectations expressed by Dam Safety Monitoring Directorate of C.W.C. New Delhi. Any error, discrepancies omissions if any may please kindly by brought to the notice. So that it can be taken into consideration in the next report.

The efforts taken by the Superintending Engineer, Dam Safety Organisation, Nashik and his team, for completion of this report are highly appreciated.

Place: Nashik Date: 11/10/2022 -Sd-(R.R. Shah) Director General Design, Training, Hydrology, Research and Safety MERI, Nashik " Draft ADHSR of Marathwada Region for Year 2021-22 is Prepared By"

(P.S.Patare) Executive Engineer Dam Safety Division No.3, Nashik

#### "Proposed for Approval"

(M. S Amale) Superintending Engineer Dam Safety Organisation,Nashik (S. S. Pagar ) Chief Engineer Hydrology & Dam Safety, Nashik

"Approved"

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#### Part-1 General

#### 1.01 Introduction :

As per National Register of Large Dam (NRLD) published by CWC, New Delhi, Maharashtra has the distinction of having largest numbers of dams in the country.

A separate Organisation called Dam Safety Inspectorate, Nashik was functioning in the State since 20/10/1980. Its status is upgraded as Dam Safety Organisation, Nashik from 01/05/1985. The organization consists of a circle level unit headed by Superintending Engineer under which Executive Engineer, Dam Safety Division No.3, Nashik looks after Marathwada Region.

#### 1.02 Inspection of Dams :

The Government of Maharashtra has delegated powers of Pre and Post Monsoon Inspection to competent authority for Pre and Post Monsoon Inspection of the Dams vide G.R Dtd.23/08/1998.

Dam Safety Organization, Nashik carries out scrutiny of the inspection reports received from field offices for Class-I & II Dams. Significant & Serious deficiencies observed during scrutiny are immediately intimated to Field Offices to carry out Remedial Measures.

The "Annual Dam Inspection Programme" is sanctioned by Director General, DTHRS MERI Nashik. Test inspections are carried out by Dam Safety Organization as a third party inspection to crosscheck the inspections carried out by Field Offices.

Marathwada Region comprising 567 Government owned Completed Dams (includes 2 National Important Dams & 47 Dams under Construction Dams) & 4 private Dams

DSO, Nashik monitors all Government Dams from safety point of view. In addition to this DSO, Nashik carried out detailed inspections of 4 Private Dams (2 owned by AMC, Aurangabad and 1 by Jalna Municipal Council & 1 by Udgir Municipal Council) on Consultancy basis.

	No. Of	No. Of	No. Of	
District	Class- I	Class- II	Class- III	<b>Grand Total</b>
	Dams	Dams	Dams	
AURANGABAD	5	33	51	89
JALNA	4	16	23	43
PARBHANI	5	6	10	21
HINGOLI	1	4	11	16
BEED	3	65	58	126
LATUR	10	57	38	105
NANDED	6	28	48	82
OSMANABAD	2	34	44	80
YEOTMAL	1	0	0	1
TOTAL	37	243	283	563
PRIVATE	0	4	0	4
GRAND TOTAL	37	247	283	567

1.03 District wise and class wise break up of number of Dams :

## 1.04 Time Schedule of Inspections :

The Government of Maharashtra has designed systematic approach for monitoring each and every dam. The periodical inspection of dams must be completed as per following schedule.

	Last dates for			
Type of Inspection	Completion of Inspection	Sending of Inspection reports to concerned authorities.		
(1) Pre Monsoon	15th May	30th June		
(2) Post Monsoon	30th November	31st December		
<ul><li>(3) Special inspection before the first filling (Report need not be sent to Dam safety Organization)</li></ul>	30th April	31st May		
(4) Special inspection after the first filling	Within one week after the lake attains the intended storage level.	Within one week from the date of inspection.		
(5) Special inspection after a severe distressing event or accident or incident.	Immediately after the event is noted.	Within one week form the date of inspection?		

## 1.05 Classification of Dams :

The dams are categorized into three types based on their component and features as below.

SR No	Type of Dam	Height from general level of deepest foundation in m.	Impounded gross storage capacity Up to FRL in M Cum	Spillway capacity	Type of spillway
1	2	3	4	5	6
1	Class-I	Above 30 m	Above 60 M	Above 3,000	Gated Spillway
	Dam		Cum	Cumecs	
2	Class-II	15 m to 30 m	15 M Cum	2,000 to	Ungated Spillway
	Dam		upto 60	3,000 Cumecs	
			MCum		
3	Class-III	10 m.to15m	1.0 M Cum	2,000 to	Ungated Spillway
	Dam		upto 15 MCum	3,000 Cumecs	

## Note :

1) All dams more than 15 meters in height will be classified under "Large Dam"

Irrespective of other parameters.

2) All dams less than 10 meters in height will be classified as "Small Dam" irrespective of other parameters.

3) In order to determine the exact category of "Large Dam" following procedure shall be followed. The category of dam as per (I) Height (II) Storage Capacity & (III) Spillway Capacity shall be worked out individually. The highest of category shall be

appropriate category of dam

4) Apart from above following additional parameters shall be considered for deciding

the category of the dams between 10 to 15 m. in height.

- a) Dams having length of crest more than 2000 m. OR
- b) Dams having specially difficult foundation problems OR
- c) Dams with unusual design shall be classified under "Large Dams (Class-II)"
- d) Dams having length of crest more than 500 meters but less than 2000 meters Shall be classified as "Large Dams (Class-III)"

## 1.06 Field Inspection Authorities :

The designated inspection authority for periodical inspection of dam depending upon the classification of type of dam is as below

Sr. No.	Type of Dam	Inspection authority	Inspection Reports to be sent to	Test Inspection
1	2	7	8	9
1	Class-I	Superintending	1) Chief Engineer	Test Inspection by the
	Dam	Engineer/	2) Superintending	Regional Chief Engineer/
		Administrator	Engineer Dam	Chief Administrator for the
			Safety Organization.	dams having height more than
				60 m or storage capacity more
				than 1000 MCum or spillway
				capacity 10000 Cumecs or
				more
2	Class-II	Executive	1) Superintending	
	Dam	Engineer	Engineer/	
			Administrator	
			2) Superintending	
			Engineer, Dam	
			safety Organization	
3	Class-III	Deputy	1)Superintending	
	Dam	Engineer	Engineer/	
			Administrator 2)	
			Executive Engineer	

## 1.07 Preparation Of Annual Dam Health Status Reports Of Class-I & class-II Dams :

Dam safety Organization carried out scrutiny of the periodical inspection reports of Class-I & Class-II dams received from field offices and significant deficiencies are immediately communicated to concern authorities to carry out remedial measures.

Based on all periodical inspection reports from Field Offices and Test Inspections carried out by DSO, Nashik, Region wise Annual Dam Health Status Report is published by DG, DTHRS, MERI, Nashik and submitted to Government, CWC and circulated to all concerned Field Offices.

#### 1.08 Preparation of Annual Dam Health Status Report of Class-III Dams :

The responsibility of Health and Safety Monitoring of Class-III dams lies with the respective Chief Engineer. Hence for Class-III Dams based on periodical inspection reports, Annual Health Status Report of Class-III dams should be prepared by concern Field Chief Engineers and forwarded to DSO, Nashik for record.

## 1.09 Guidelines Regarding Preparation of Annual Dam Health Status Report :

ADHSR is prepared in DSO, Nashik as per Central Water Commission New Delhi's guidelines received vide letter Dtd. 28/08/2002. As per this letter it is intimated that all States / Organizations should submit the Annual Dam Health Status Report (ADHSR) in the month of 'April' every year.

## 1.09.1 Categorization of Deficiencies

The deficiencies observed are categorized as per CWC, New Delhi's letter Dtd. 28/08/2002 as below

Category	Action to be taken
Category-1	Dams with Major deficiencies which may lead to dam failure.
Category-2	Dams with Major rectifiable deficiencies needing immediate attention.
Category-3	Dams having Minor/ No deficiencies.

For further detailing of deficiencies based on the nature and priority of deficiency, DSO, Nashik has standardized all the three types of deficiencies. These standardized deficiencies are as follows

## 1.09.2 Category – 1 Standard Deficiencies:

Sr. No.	Deficiencies	Category identifier
1 E -	Earthen Dam.	
1	Seepage water has created an open pathway or pipe through dam, which may lead to failure of dam by piping.	1E.1
2	Heavy seepage with muddy or turbid water is observed through any part of dam.	1E.2
3	Seepage water flooding from a boil in the foundation or from relief well on downstream side of dam.	1E.3
4	Outlet well / Head regulator well and hoisting structure is collapsed/completely damaged.	1E.4
5	Outlet pipe in the body of the dam is damaged/failed and uncontrolled outlet- releases eroding Toe of dam.	1E.5
6	Debris stuck under gate or gate leaf is cracked / failed resulting uncontrolled flow through outlet.	1E.6
1 M	Masonry Dam	
1	Downstream movement or tilting of dam.	1M.1
2	Differential movement of dam blocks/monoliths.	1M.2
3	Vertical Displacement with visible cracking in the body of dam.	1M.3
4	Spillway gate damaged / not working.	1 M.4

## 1.09.3 Category-2 Standard Deficiencies :

Deficiency Cat II (A)	Deficiency Cat II (B)
Earthen Dam	
<b>A.1</b> : Boil/leakage/ seepage/ wet patches/ slushiness in Earthen Dam.	<b>B</b> 1: Dam section is not as per design
A 2: Standing pool / Ponding / Water Logging / Slushy condition on D/S of Dam	<b>B 2:</b> Cross and toe drains not working properly/ drains silted or vegetated causing stagnant pool of water.
<b>A 3</b> : Leakages in vicinity of junction between earthen dam & masonry dam portion.	<b>B 3:</b> Considerable settlement of embankment / Rock toe/Pitching/ U/S & D/S slops, bulging/concavity of slopes.
<b>A 4</b> : Major leakages through outlet conduit/pipe joints/Gates.	<b>B</b> 4: Longitudinal / Transverse cracks/ low area/sink holes/gully formation on top side slope of earthen dam.
<b>A 5</b> ; Relief wells not functioning properly./ Abnormal rise in water level in wells.	<b>B 5:</b> Outlet gates not functioning properly. Stem rod is bent(Service gate/Emergency gate/Stop log gate/sluice gate)
<b>A 6</b> : Outlet well is damaged/not in good condition /cracks observed/jets of water in well.	<b>B</b> 6: Approach to dam through all weather road not constructed/maintained properly.
A 7 : Retrogression /scouring in tail channel.	<b>B</b> 7: Waste weir/waste weir bar not in good condition/coping damaged/leakage through waste weir.

Deficiency Cat II (A)	Deficiency Cat II (B)
Masonry / Concrete Dam	
<b>A 8</b> : Drainage gallery inaccessible/No adequate lighting./ No dewatering arrangement or failure.	<b>B 8:</b> Pointing on U/S face of dam not in good condition./deterioration spalling of concrete surface.
<b>A 9 :</b> Foundation drains / holes/ porous pipes/chocked/ no seepage through foundation drain holes.	<b>B</b> 9: Instruments not in working condition.
A 10 : Heavy leakages through porous pipes/ through dam body in gallery /monolith joints.	<b>B</b> 10: Leakages through River sluice.
<b>A 11</b> : Sweating / seepages through D/S of masonry dam	
<b>A 12</b> : Excessive considerable leaching from seepage water.	
<b>A 13</b> : Swelling / minor cracking observed on body of dam.	
<b>A 14</b> : EDA / Stilling basin damaged/Hydraulic performance not good.	
<b>A 15</b> : Leakages through spillway /piers//junction of flank wall.	
A 16: Damages / foundation erosion/ scour/undermining observed in vicinity of flank walls/ guide walls/ junction walls/return walls.	
<b>A 17</b> :End weir not in good condition / scouring noticed on immediate D/S.	
Spillway gates	
<b>A 18</b> :Wire ropes of hoist not in good condition/hoisting structure damaged/cracked.	<b>B 11</b> : Surface paint/steel surface of spillway gates deteriorated.
<b>A 19</b> : Alternative power system Generator for gate operation not working properly.	<b>B 12</b> : Damage to Rubber seals/ considerable Leakages through gates.
A 20 : Operation of gates not smooth needs repair.	
Other structures	
	<b>B</b> 13 : Heavy vegetation/big trees on embankment top/slope making dam portion not accessible.
	<b>B 14</b> : Deck bridge slab/ pier / damaged cracked/ alignment disturbed.
	<b>B</b> 15 :Major portion of Pitching damaged/washed away.

## 1.09.4 Category-3 Standard Deficiencies :

Sr. No.	Deficiencies	Category identifier
1	Profuse growth of bushes and trees over dam portion.	3.1
2	Guard stones/ chainage stones and parapet wall not provided /damaged.	3.2
3	Growth of aquatic weeds in reservoir of dam is observed.	3.3
4	Ant hills or crab holes/holes made by rodents/animals.	3.4
5	Minor undulation/ settlement/slightly less top width/ Rain cuts / pot holes observed on dam top & slopes.	3.5
6	Access road/Dam top road surface/ slab joints damaged needs repair.	3.6
7	Pitching on embankment of dam is dislocated /disturbed at some places.	3.7
8	Breaching section is not accessible/ Instruction board showing operation of breaching section is not available.	3.8
9	Section of Toe drain/cross drain/ out fall drain/rock toe damaged at some places. Pitching of drains disturbed. Some weed, vegetation growth/ siltation in nalla/drains. Nalla needs regradation.	3.9
10	Surface drain/ Catch water drains for berms are silted /damaged	3.10
11	Electric cable & wiring are damaged/not in good condition.	3.11
12	Minor leaching in the gallery/ body of dam.	3.12
13	V – notches/ measuring devices are not in working condition/ silted /damaged/ not provided.	3.13
14	Mosquito net door is to be provided to avoid entry of reptiles in the gallery.	3.14
15	Damage to natural slope protection works, guniting damaged/washed out. Wire mesh exposed.	3.15
16	Guide wall/Divide wall/Guide bund/End Sill wall damaged/ Pointing is not in good condition/weep holes not functioning. At some places w.w bar/coping is damaged.	3.16
17	Provision of access to stilling basin/ladder not provided.	3.17
18	EDA ponding with water not possible to Inspect.	3.18
19	Minor erosion/ Scouring/Retrogression/ pot holes in tail channel. Ponding, standing Water in EDA / Tail channel.	3.19
20	Lubrication/painting/minor repairs required for parts of Gates / hoisting Structure/Rubber seal damaged/ replacement.	3.20
21	Approach bridge to intake well / spillway gates railing /flooring plates damaged / need repairs. Need of ladder for inspection well/EDA.	3.21
22	Minor leakages through river sluice/outlet/ gates.	3.22
23	Air vent not periodically cleaned./damaged/closed.	3.23
24	EAP / ROS /GOS /Record drawings/ not provided / not prepared at dam site.	3.24
25	The record of periodical measurements of leakage discharge from dam / relief well is not maintained.	3.25
26	Street light on dam top is not provided/not working.	3.26
27	Security / CC TV camera/entry gate not provided/not working.	3.27
28	Sufficient staff arrangement is not available for security ,instrument readings and measurements and maintenance on dam site.	3.28
29	Fencing around dam is not provided/ damaged due to which unauthorized trespassers are seen.	3.29
30	Communication facilities like mobile wireless, warning devices, telephone is not	3.30

Sr. No.	Deficiencies	Category identifier
	available at dam site.	
31	Sufficient stock of spares/stationary required is not available at dam site. Storage arrangement not provided at site.	3.31
32	Minor leakages through masonary/ concrete dam body/gallery of dam/outlet well.	3.32
33	Security cabin at dam entrance/Irrigation outlets not provided/damaged/needs repair.	3.33
34	Approach channel silted. Trash rack need to be cleaned/ damaged/not provided.	3.34
35	Minor damages to spillway / masonary/ concrete portion of dam/outlet well.	3.35
36	Porous pipes/foundation drains / holes not periodically cleaned.	3.36

#### 1.10 Standard Procedure For Confirmation And Removal of Category-1

#### **Deficiency of Dams**

A systematic approach and working methodology is very essential to monitor the safety aspects of the dams.

During the scrutiny of Pre and Post Monsoon report or during DSO test Inspection whenever it is found that the deficiency is of Category-I, it will be immediately communicated to concern SE and CE.

Concerned SE /CE should immediately visit the dam and should satisfy himself that the deficiency pointed out is a major deficiency which may lead to failure of dam and should confirm to the DSO, Nashik regarding the classification of deficiency as per his opinion.

After conformation from Field Chief Engineer it will appear in ADHSR.

Remedial Measures for Category-I deficiency removal shall be undertaken immediately. And after completion of physical work of deficiency removal, Concern Chief Engineer should communicate status to DSO, Nashik immediately.

#### 1.11 Special Deficiencies

Director general, DTHRS, Nashik has circulated a circular of special deficiencies dated 21/07/202 ( सं.प्रा.ज.सं.सु./म.अ.सं.सं./प्रशा/अधि/88/सन 2020) to all field offices to attend the below special deficiencies along with periodical inspection report

## Statement No-1

## Special Attention Deficiencies (Civil), Attached with Pre- Post monsoon Inspection Reports

## (Availability of Compulsory Manpower & Documents at dam Site)

Deficiency	Deficiency	Present Status,
category		Details.
S = 1	Wilstein European Action Display is based at down site and at 2	
Sp-1	whether Emergency Action Plan is kept at dam site of hot?	
Sp-2	Whether Approved Reservoir Operation Schedule is kept at	
Sp-3	Whether Latest approved gate Operation Schedule is to be	
Sp-4	Whether Record Drawings sets are kept at dam site /	
Sp-5	Whether Standard Operating Procedure copy with Updated	
	contact numbers of all concerned authorities are kept at	
Sp-6	Whether Chart showing location of rain gauges / river	
	gauges on U/s catchment & approximate travel time of	
Sp-7	If CCTV is established, how observations are done round	
	the clock & who is responsible person to observe these.	
	Whether Sufficient arrangement of staff is available or not.	
	Engineers / Operators / Electrician / Watchmen / Security	
Sp-8	etc. and also staff for instrument reading, measurement &	
	maintenance. They may be Govt. employee or through	
	outsourcing. This staff is especially compulsory during	
	monsoon period.	
Sp-9	Whether Communication facilities like mobile, wireless,	
	warning devices, telephone are available at dam site, or	
Sp-10	Whether The record of periodical measurements of leakage	
	discharge from dam / relief well etc. is maintained or not.	
Sp-11	Is there any profuse growth of bushes or trees over any	

## Statement No-2

## Special Attention Deficiencies (Mech & Elect), Attached with Pre- Post monsoon Inspection Reports

## ( Compulsory Minimum repairs, For Spillway Gates & Gallery)

Deficiency	Deficiency	Present Status,
category		Details.
Sp-12	Whether Wire ropes of hoist are in good condition/hoisting structure damaged/cracked ?.	
Sp-13	Whether Alternative power system- Stand by two Generators for gate operation are working properly or not ?	
Sp-14	Whether the <b>o</b> peration of all gates is smooth or needs repair ?.	
Sp-15	Whether Lubrication/ painting/ minor repairs for parts of Spillway Gates and Hoisting structure are carried out or not ?.	
Sp-16	Whether Rubber seals of gates are damaged or needs replacement ?.	
Sp-17	Due date of painting of each part should be displayed on dam site as per mechanical maintenance schedule	
Sp-18	Whether Electric cable / wiring / lights etc are in working condition are not ?	
Sp-19	Whether gallery is having excessive leakages ?	

## 1.12 National Register of Large Dams (NRLD) :

Dams having Height above 10 meter are classified as per the norms of International Commission on Large Dams (ICOLD).

NRLD is consists of information of Large Dams as per 20 columns proforma covering information regarding salient features.

NRLD is updated in every January. Hence Field offices need to submit the information of new dams every year to DSO by December to incorporate it in NRLD. The response regarding submission of NRLD information from field offices is very poor, it is always observed that DSO officials has to take rigorous follow up to obtain requisite information.

## 1.13 Points of attention :

General	Details
Inspection details	<ol> <li>The periodical inspection reports of all the dams shall be sent in original instead of carbon or xerox copy. (Signed copy shall be emailed in advance to DSO.</li> </ol>
	2) Ambiguous or incomplete replies shall be avoided. It is necessary to check point wise replies, which should clear and self explanatory.
	3) The deficiencies observed frequently since long shall be deleted after verification of rectification work.
	4) The inspecting officer is advised to write the word "special attention" in inspection report against all such items wherever immediate attention is necessary from concerned field officer in charge of dam from safety point of dams and life & property on the downstream & would be useful for identifying categorization of deficiencies in Dam Safety Organization, Nashik.
	5) The information in Appendix II (Performance of meteorological instruments installed) and Appendix III (performance of taking observation of instruments installed in large dams) shall be filled properly and complete.
	6) The compliance of rectification work of deficiencies of each dam mentioned in status report shall be communicated to Dam Safety Organization, Nashik every year so that this can be included in the Action Taken Report Part-I of status report.
Salient features	<ol> <li>Due care shall be taken while filling the salient features of dam and information regarding N.C.D.S. documents.</li> </ol>
	<ol> <li>Date of inspections is not mentioned in some Pre / Post Inspection Reports. This is mandatory since it will reflect in the Annual health status report.</li> </ol>
Dam and Dam reach ( Embankment)	<ol> <li>If the existing dam section is found under section as compared to the design section during inspection then the work of re-sectioning shall be carried out and opinion of inspecting officer shall be stated in inspection report.</li> </ol>
	2) The extent of embankment settlement shall be furnished with its measurement & Reduced Distance (R.D.) and it shall be with compared designed cross section.

Gallery / Shaft	The monolith wise quantum of leaching in galleries and all type of leakages
Drainage (Concrete /	in dam shall be noted in inspection report.
Masonry)	
Spillway and Energy	The quantum of retrogression/scouring in tail channel shall be given in
<b>Dissipation Structure</b>	inspection report.
General	Details
Hydro-Mechanical	The trial of spillway gates shall be carried out before monsoon every year &
Component and	observed condition shall be mentioned in inspection report.
Turbine/Pump	
Instrumentation	It is observed that the information regarding number of instruments
	installed does not tally for pre & post monsoon inspection report of the
	same dam. In some cases it is observed that the list of instruments given in
	previous year do not appears in the current year. These discrepancies
	should be avoided.



## Part-2: Action Taken Report (ATR) :

## 2.1 General :

Annual Dam Health Status Reports (ADHSR) of Dams for Year 2020-21 was published by Director General, DTHRS, MERI, Nashik in May 2020 and submitted to Govt. of Maharashtra and also circulated to all Field Offices ranging from Divisions to Corporations for information and carrying out remedial measures.

It is expected that Field Officers should go through the Status Report scrupulously and attend remedial measures on priority basis and submit Action Taken Report (ATR) for reflecting necessary repairs & attention given for maintaining safety of Dams in the ADHSR.

## 2.2 ATR Submitted by Field Offices :

In this region there are Government owned 37 Class-I & 243 Class-II Dams & Private owned 4 Class-II Dams

. As per ADHSR 2020-21 Action Taken Report was expected from Government owned 5 Class-I & 31 Class-II Dams & Private owned 4 Class-II Dams.

However no any Action Taken Report were received from Government and Private Dams. [Ref. Table 2.1, 2.2 & 2.3]

## 2.3 Action Taken Report of Class-I & Class-II Dam (Government owned & Private owned)

	Category		Tota	l Dai	m	А	TR 1	receiv	ved	Ph	ysica	lly fu	ully co	ompl	eted	Physically partly comple					ted
	Class		Ι		II		Ι	Ι	Ι		Ι	1	Ι		%		Ι	Ι	Ι	%	)
	No. of	Dam	Deficiency	Dam	Deficiency	Dam	Deficiency	Dam	Deficiency	Dam	Deficiency	Dam	Deficiency	Dam	Deficiency	Dam	Deficiency	Dam	Deficiency	Dam	Deficiency
	Category 1																				
1	WRD																				
2	Private											1111									
										Cate	gory	2									
3	WRD	5	19	31	88	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Private	0	0	4	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	5	19	35	102	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

## 2.4 Conclusions :

As no ATR are received in DSO. Field officers & higher Authorities shall take note of this seriously.

## 2.5 Points of Attention:

## A) Government & Private Owned Dams :

Sr. No.	Expected Inspection Report in DSO	Received DS	in time in SO	Even rigorous f by D	after ollow up SO	ATR w recei	ere not ved
		Number	%	Number	%	Number	%
1	40	0	0	0	0	40	0

- 1. Concerned Chief Engineer should monitor and instruct field Superintending Engineer & Executive Engineer regarding submission of ATR to DSO, Nashik to reflect exact status of Dam Safety works. Otherwise whole execercise of publishing ADHSR will be futile.
- 2. Concerned Dam owner should give serious attention regarding submission (Before 15<sup>th</sup> feb 2022) of ATR to DSO, Nashik to reflect exact status of Dam Safety works. Otherwise whole execercise of publishing ADHSR will be futile.

## Table - 2.1

## Consolidated Abstract of Status of Compliance of Category-1 Deficiencies in ADHSR-2020-21

Sr.No	Sr.No Agency Dams & Deficiencies											Sta	tus o	f Defi	icienc	ies re	mova	l as p	er coi	nplia	nce re	port	receiv	red in	DSO	, Nasl	nik				
		Clas Da	ss-I am	Clas Da	ss-II am	To	otal	Pł	nysica	ully fu	lly co	mplet	ed	Ph	ysical	ly pai	tly co	mple	ted		Admi	inistra initi	ative a ated	action		(	Comp rec	lianc eived	e repo in D	ort no SO	t
								Cla Da	ss-I am	Clas Da	ss-II am	To	otal	Cla Da	ss-I am	Clas Da	ss-II am	To	otal	Cla Da	ss-I am	Clas Da	ss-II am	To	tal	Clas Da	ss-I m	Clas Da	s-II Im	То	ital
		No. Of Dams	No. of Def. Cat -1	No. Of Dams	No. of Def. Cat -1	No. Of Dams	No. of Def. Cat -1	No. Of Dams	No. of Def. Cat -1	No. Of Dams	No. of Def. Cat -1	No. Of Dams	No. of Def. Cat -1	No. Of Dams	No. of Def. Cat -1	No. Of Dams	No. of Def. Cat -1	No. Of Dams	No. of Def. Cat -1	No. Of Dams	No. of Def. Cat -1	No. Of Dams	No. of Def. Cat -1	No. Of Dams	No. of Def. Cat -1	No. Of Dams	No. of Def. Cat -1	No. Of Dams	No. of Def. Cat -1	No. Of Dams	No. of Def. Cat -1
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
														NI	L																

## Table - 2.2

## Consolidated Abstract of Status of Compliance of Category-2 Deficiencies in ADHSR-2020-21

Sr. No	Agency		Dam	s & E	<b>D</b> eficie	encies	6					S	tatus	of De	ficien	cies r	emova	al as j	per co	mplia	ance r	eport	receiv	ved in	n DSO	, Nas	shik				
		Clas Da	ss-I m	Cla	ss-II am	T	otal	P	hysic	ally fi	ully co	mple	ted	Ph	ysical	lly pa	rtly co	mple	eted		Admi	inistr init	ative a iated	action	l		Comp rec	olianc ceivec	e repo 1 in D	ort no SO	t
								Cla	ass-I	Cla	ss-II	Te	otal	Cla	ss-I	Cla	ss-II	To	otal	Cla	.ss-I	Cla	ss-II	To	otal	Cla	iss-I	Cla	ss-II	Te	otal
								D	am	D	am			D	am	D	am			D	am	D	am			D	am	D	am		
		No. Of Dams	No. of Def. Cat - 2	No. Of Dams	No. of Def. Cat - 2	No. Of Dams	No. of Def. Cat - 2	No. Of Dams	No. of Def. Cat - 2	No. Of Dams	No. of Def. Cat - 2	No. Of Dams	No. of Def. Cat - 2	No. Of Dams	No. of Def. Cat - 2	No. Of Dams	No. of Def. Cat - 2	No. Of Dams	No. of Def. Cat - 2	No. Of Dams	No. of Def. Cat - 2	No. Of Dams	No. of Def. Cat - 2	No. Of Dams	No. of Def. Cat - 2	No. Of Dams	No. of Def. Cat - 2	No. Of Dams	No. of Def. Cat - 2	No. Of Dams	No. of Def. Cat - 2
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
A) C	A) Chief Engineer, Water Resources Dep						ent, Au	rang	abad																						
1	NIC, Nanded	03	09	03	09	06	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	AIC, Aurangabad	01	06	00	00	01	06	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	BIPC, Parali (V)	00	00	01	03	01	03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tota	1 (A)	04	15	04	12	08	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B) C	hief Engineer,	CAD	A, Au	ranga	bad		•				•																•				
1	CADA Aurangabad	00	00	10	29	10	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	CADA, Beed	00	00	07	15	07	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	CADA,Latur	01	04	10	32	11	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tota	1 (B)	01	04	27	76	28	80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gove (A+1	ernment Total B)	5	19	31	88	36	107	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Sr. No	Agency	Dams & Deficiencies Status of Deficiencies re											es re	moval	as pe	er con	npliar	nce re	port r	eceiv	ed in	DSO,	Nas	hik							
	-	Class	s-I	Class	-II	Tot	al	Phy	sicall	y fully	y com	plete	d	Phy	sicall	y par	tly con	mplet	ed	1	Admi	nistra	tive a	ction		(	Comp	lianc	e repo	ort no	it
		Dar	n	Dar	n		_	01	Ŧ	01		/ <b>T</b>	1	01	Ŧ	01	TT		. 1	01	T	initia	itea	701	. 1	01	rec	cived		<u> </u>	
								Dar	s-I n	Class Dan	-11 n	lota	al	Clas Da	s-I m	Clas Da	s-II m	101	tal	Clas Da	m	Clas Da	s-II m	10	tal	Clas Da	ss-I am	Clas Da	am	10	otal
		tms	- Lat -	turs	- 19	sun	Cat -	ums	- Tat -	ums		ums	- Lat -	sun	Lat -	ums	Cat -	smi	Cat -	smi	Cat -	smi	Cat -	smi	Cat -	ums	Cat -	smi	Cat -	sun	Cat -
		Of Da	2	Of Da	2	Of Da	Det. 2	Of Da	Der. 2	Of Da	2	Of Da	2	Of Da	Det. 2	Of Da	Def. 2	Of Da	Def. 0 2	Of Da	Def. 0 2	Of Da	Def. ( 2	Of Da	Def. 0 2	Of Da	Def. ( 2	Of Da	Def. 2	Of Da	Def. ( 2
		No.	10.01	No.	10.01	No.	No. of	No.	N0. 01	No.		No.	10.01	No.	No. 01	No.	No. of	No.	No. of	No.	No. of	No.	No. of	No.	No. of	No.	No. of	No.	No. of	No.	No. of
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Priva	ate																														
1	AMC, Aurangabad	0	0	02	06	02	06	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	JMC, Jalna	0	0	01	05	01	05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	UMC, Udgir, Dist.Latur	0	0	01	03	01	03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Private Total	0	0	04	14	04	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Grand Total	05	19	31	102	40	121	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

## Table - 2.3

Sr. No	Name of Dam	Total Number of Dam	Sr. No	Name of Dam	Total Number of Dam
1	2	3	4	5	6
Class -	I Dams		Class - II Da	ams	
A) Chief	f Engineer & Chief Administrator, CADA, Aurang	gabad			
I ) Super	intending Engineer & Administrator, C.A.D.A,	Aurangabad			
1)Execut	tive Engineer, Jalna Irrigation Division, Jalna				
			1	Jui	04
			2	Dhamna	
			3	Kalyan Pir	
			4	Kalyan Girija	
2)Execut	tive Engineer, Aurangabad Irrigation Division, A	urangabad			
			1	Soyegaon	01
II ) Supe	rintending Engineer & Administrator, C.A.D.A	, Latur			
1)Execut	tive Engineer, Latur Irrigation Division-1, Latur				
1	Manjra	1			
2)Execut	tive Engineer, Latur Irrigation Division-2, Latur				
			1	Anandwadi	
			2	Halad wadhona	
			3	Dongargaon	05
			4	Andhori	
			5	Tiru	
3)Execut	tive Engineer, Osmanabad Irrigation Division-1.	Osmanabad			
			1	Tintraj	
			2	Khandeshwar	03
			3	Chanadi	

Sr. No	Name of Dam	Total Number of Dam	Sr. No	Name of Dam	Total Number of Dam
1	2	3	4	5	6
Class -	I Dams		Class - II Dan	ns	
III ) Suj	perintending Engineer & Administrator, C	A.D.A, Beed			
1)Execu	itive Engineer, Jayakwadi Irrigation Division	-3, Beed			
			1	Domri	1
2)Execu	tive Engineer, Majalgaon Irrigation Division	n, Parali (V)			
			1	Kasari	
			2	Daithana	04
			3	Limbachiwadi-2	
			4	Dethewadi	
B) Chie	ef Engineer, WR, Aurangabad				
I ) Supe	rintending Engineer, NIC, Nanded				
1)Execu	itive Engineer, NID(North), Nanded				
			1	Dongargaon	02
			2	Palaiguda	
2)Execu	itive Engineer, NID(South), Nanded	1			
1	Lower Manar	1	1	Sonpethwadi	02
			2	Yedur	
3)Execu	itive Engineer, PID, Basmatnagar				
1	Yeldari	- 02			
2	Siddheshwar				
II) Sup	erintending Engineer, BIPC, Parali(V)				
1)Execu	itive Engineer, LMID, Latur	1			
			1	Ghonshi MI Tank	1
III ) Suj	perintending Engineer, AIC, Aurangabad				
1) Exec	utive Engineer, MID-1, Aurangabad45.				
1	Shivna Takli	01			
	Private Dams				
Aurang	abad Municipal Corporation, Aurangabad		1	Kham	
			2	Over (Harsul)	04
Jalna M	unicipal Council, Jalna		1	Ghanewadi	
Udgir N	Iunicipal Council, Udgir, Dist.Latur		1	Banshelki	
	Total	5			25

## Table 2.4

## ATR on Category-1 Deficiency in Class-I Dams

Sr. No.	Dam Features	Date Of Inspection	Main Component Of Dam	Observation / Significant Deficiencies Noticed	Remedial Measures Suggested	Implementation Status
1	2	3	4	5	6	7
				NIL		
# ATR on Category-2 Deficiency in Class-I Dams

Sr. No.	Dam Features	Date of Inspection	Inspecting Officer	Main Component of Dam	Observation / Significant Deficiencies noticed	Remedial Measures Suggested	Implementation Status		
1	2	3	4	5	6	7	8		
A)Cl	nief Engineer, CADA, Auran	gabad							
I) Superintending Engineer & Adm., C.A.D.A., Latur									
1) Exe	ecutive Engineer, Latur Irri	gation Division	n-1, Latur						
1	Name :- MANJRA Year of completion :- 1980 Location : - Longitude :- 76 15' 00" Latitude :- 18 55' 00" Height :- 30 m Gross capacity :- 22.40 Mm <sup>3</sup> Design Spillway capacity :- 8370 Cumecs S.N. in National regi. of large Dams 2009 :- MH09MH1585	11/2/2020 18/12/2020	Shri. S.N.Bolbhat Shri. A. S. Mehetre, S.E& Adm.,CADA Beed	Foundation Body Wall Spillway	Considerable leaching from the seepage water and deposition of lime near the seepage exit spots. (A12) Leakage through guide wall is observed. (A15) Emergency gates all wire rope, guide tees are rusted. Gates End, Arms holes are missing. Gates both side wire rope are rusted. Gates hoist and gear train covers are very heavy to open and close. (A18)	Quantify the leaching material chainage wise / monolith wise. And record shall be built up. Inspect the u/s face of guide wall. Identify the location of entry point for water. Stop the Entry of water on u/s face. Lubrication must be carried out at required frequency	Not Received		
				Structural performance	Emergency & service gates are rusted. Hoist covers are broken. Rubber seal & other parts are not in working condition. (B5)	Trail run must be carried out first.			
				Outlet	Stop log gates are not in working condition. (B5)	Rust preventive colouring must be carried out first.			
					Overall condition of river outlet works/river sluices is not satisfactory. (B5) (3.22)				

Sr.	Dam Features	Date of	Inspecting	Main	Observation / Significant	Remedial Measures Suggested	Implementation			
No.		Inspection	Officer	Component	Deficiencies noticed		Status			
				of Dam						
1	2	3	4	5	6	7	8			
B) Chief Engineer, WR, Aurangabad										
I) Superintending Engineer , NIC, Nanded										
1) Exe	ecutive Engineer, NID(Sout	th), Nanded								
2	Name :- LOWER MANAR Year of completion :- 1964 Location : - Longitude :- 76 45' 00" Latitude :- 19 4' 30" Height :- 27 m Gross capacity :-139 Mm3 Design Spillway capacity :- 8778 Cumecs Sr. No. in National Register Of large Dams - MH09MH0170	20/5/2020 10/11/2020	Shri.S.K. Sabbinwar S.E.,N I.C, Nanded	W.W.Bar & TC	Scouring is observed at spillway D/s chainage 110-240 m. (A7)	Scouring is far away from dam body. It should be kept under observation. Detail Geological investigation shall be carried out.	Not Received			

Sr.	Dam Features	Date of	Inspecting	Main	Observation / Significant	Remedial Measures Suggested	Implementation
No.		Inspection	Officer	Component	Deficiencies noticed		Status
		_		of Dam			
1	2	3	4	5	6	7	8
1) Exe	ecutive Engineer, PID, Basn	natnagar, Dist	. Hingoli				
3	Name :- YELDARI Year of completion :- 1962 Location : - Longitude :- 76 45' 00" Latitude :- 19 4' 30"	18/5/2020 28/10/2020	Shri.S.K. Sabbinwar S.E.,N I.C, Nanded	Relief Wells	Relief wells @ch. 299.90, 303.10, 305.00, 306, 306.50, 307.00, 308.50 are not in good condition.(A5)	Relief well data of past period shall be submitted to DSO.	Not Received
	Height :- 51.23 m Gross capacity :-934.440 Mm3 Design Spillway capacity :-			Foundation Gallery & Body Wall	Repairing to lighting arrangement of Drainage Gallery is essential.(A8)	Proper electrification in moist/damp environment shall be done in consultation with WRD electrical wing.	
	10477 Cmecs Sr. No. in National Register Of large Dams - MH09HH0171				Seepage water spring is observed above 50% capacity on Left flank of NOF @ Ch.40 & 60 m and level @ 450.200 and 451.500 m (A1)	Location of spring with reference to the water level in dam & gallery should be monitored.Quantify lekage & record shall be maintained to decide remedial measures	
					Sweating observed on D/s face of dam. (A11)	Location & causes of sweating should be examined & necessary repairs should be carried out by using water proofing compound.	
				End weir	End weir is not accessible. Scouring below end weir is noticed. Standing pool of water on d/s of end weir. (A17)	Access to end weir should be provided. Necessary repairs to stop scouring should be carried out.	
4	Name :- <b>SIDDHESHWAR</b> Year of completion :- 1968 Location : - Longitude :- 75 05' 30"	18/5/2020 28/10/2020	Shri.S.K. Sabbinwar S.E.,N I.C, Nanded	Earthen Dam D/s Drainage	Standing pool of water is observed in the d/s of the dam. (A2)	The D/S area of W. W. bar at least up to 200m, from bar shall be free from standing pool.	Not Received
	Latitude :- 19□ 0' 20" Height :- 38.10 m Gross capacity :-250.85 Mm3 Design Spillway capacity :- 10789 Cmecs Sr. No. in National Register Of large Dams MH09HH0172			Spillway gates	Wire ropes of gate no. 1, 10, 12 & 13 need to be replaced. (A18)	Wire ropes of gate no. 1, 10, 12 & 13 needs to be replaced / repaired with the help of Mechanical Organisation.	

Sr. No.	Dam Features	Date of Inspection	Inspecting Officer	Main Component of Dam	Observation / Significant Deficiencies noticed	Remedial Measures Suggested	Implementation Status					
1	2	3	4	5	6	7	8					
I) Sup	) Superintending Engineer , AIC, Aurangabad											
1)Exe	cutive Engineer, MID-1,Au	rangabad										
5	Name :- <b>SHIVANA TAKLI</b> Year of completion :- 2005	22/5/2020 11/11/2020	 Shri.C.H.Patole	Upstream Slope	Dam section is not as per design section (B1)	Restore the dam section as per design section.	Not Received					
	Location : - Longitude :- 75 05' 30" Latitude :- 20 07' 52" Height :- 20.40 m Gross capacity :- 39.36 Mm3 Design Spillway capacity :- 3271 Cumecs Sr. No. in National regi. Of large Dams 2009:- MH09MH1651	14/10/2020	S.E.,AIC, Aurangabad Shri.Y.K.Bhadane SE,DSO, Nashik	Crest of dam Downstream Slope Gallery / Shaft Condition	Crest profile is not as per proper elevation. (B1) At the junction of toe & ground level signs presence of wetness. (A1) Slushy condition or water logging immediately D/S of dam was observed. (A11) Heavy leakages in R/S & L/S gallery. Electrification is damaged. (A8) (A10) Leaching material deposition in throughout gallery. (A12) There is considerable leaching from the seepage water & deposition of lime near seepage exist spots. (A12) Sweating is seen on spillway. (A11) Rubber seals shows signs of weathering need to be repaired. (B12)	Restore the crest profile as per design section. Necessary remedial measures should be carried out. Necessary remedial measures should be carried out. Dewatering shall be done .Reason for heavy leakages shall be find out and leakages should be reduced by providing proper treatment. Leaching material should be tested from MERI, Nashik & repair work should be taken in hand accordingly. Necessary remedial measures should be carried out. Rubber seals should be repaired or replaced.						
				Spillway Gates Outlet	Emergency gate is under repair. (B5)	Necessary repairs should be carried out with the help of Mechanical Organisation						

# ATR on Category-1 Deficiency in Class-II Dams

Sr. No.	Dam Features	Date Of Inspection	Main Component Of Dam	Observation / Significant Deficiencies Noticed	Remedial Measures Suggested	Implementation Status
1	2	3	4	5	6	7
		5		NIL		

# ATR on Category-2 Deficiency in Class-II Dams

SR NO	DAM FEATURES	DATE OF INSPECTION	INSPECTIN G OFFICER	MAIN COMPONE NT OF DAM	SIGNIFICANT DEFICIENCIES NOTICED.	REMEDIAL MEASURES SUGGESTED	Implementation Status		
1	2	3	4	5	6	7	8		
A) C	hief Engineer & Chief Administra	tor CADA, Aurar	ngabad						
I) Superintending Engineer & Administrator CADA, Aurangabad									
1) Executive Engineer, Jalna Irrigation Division, Jalna									
1	Name : <b>DHOKSAL</b> Date of completion :1964 Location : Longitude : 75□ 21' 00" Latitude : 20□ 44" 00" Gross Capacity :10.73 Mm3 Height : 17.70 m. Design spillway Capacity 219 m3/sec. Sr No in National Register of Large	NA NA	Shri. P.B.Jadhav EE, JID, Jalna	Earthen embankment W.W. Bar. & T/C.	<ul> <li>E/W and pitching required for full length (B3).</li> <li>W.W. Masonry of body wall is heavily disturbed. Leakage extent to 2 to 3 cusecs noticed. (B7)</li> <li>Coping damaged through full length of w.w. bar.(B7)</li> <li>Apron is fully disturbed. (A14)</li> </ul>	Pitching should be provided. Necessary repairs should be carried out. Necessary treatment in the affected area shall be carried out to stop/minimize leakage. Coping work should be carried out to full length of w.w. bar. Necessary repairs should be carried out	Not Received		
	Dams 2009 : MH09MH0755				EDA heavily damaged.(A14) Scouring to d/s is observed. (A7)	Necessary repairs should be carried out. Provide necessary work / arrangement to prevent scouring.	-		

SR NO	DAM FEATURES	DATE OF INSPECTION	INSPECTING OFFICER	MAIN COMPONE NT OF DAM	SIGNIFICANT DEFICIENCIES NOTICED.	REMEDIAL MEASURES SUGGESTED	Implementation Status
1	2	3	4	5	6	7	8
2	Name : <b>DHAMNA</b> Date of completion :1974-75 Location :	NA 19/11/2020	Shri. P.B.Jadhav Ex.Engr.,	Earthen Embankment	Relief wells not functioning properly. (A5)	Necessary repairs should be carried out for proper functioning of relief wells	Not Received
	Longitude : 76 ° 50' 00" Latitude : 20 ° 27'00" Gross Capacity : 10.72 Mm3 Height : 13.45 m. Design spillway Capacity - 1388 m3/sec. Sr No in National Register of Large Dams 2009 : <b>MH09LH0450</b>		JID, Jalna	W.W Bar & T.C	Leakage to the tune of 1 cusecs observed. Pointing disturbed.(B7)	Necessary repairs should be carried out to stop the leakages & provide pointing.	
3	Name : <b>KALYAN GIRIJA</b> Date of completion :1972 Location : Longitude : 76 ° 10' 40" Latitude : 19 ° 50' 00" Gross Capacity : 10.16 Mm3 Height : 22.07 m. Design spillway Capacity - 1310 m3/sec. Sr No in National Register of Large Dams 2009 : MH09MH310	28/5/2020 23/11/2020	Shri. P.B.Jadhav Ex.Engr., JID, Jalna	W.W Bar & T.C	Excessive leakages are observed through masonry as well as foundation of w.w. bar. (B7) Scouring is noticed due to heavy leage through w.w. bar. (B7)	Necessary repairs should be carried out to stop leakages. Necessary repairs should be carried out to stop scouring	Not Received
4	Name : <b>JUI</b> Date of completion :1962 Location : Longitude : 75 ° 46' 00" Latitude : 20 ° 20' 30" Gross Capacity : 6.03 Mm3 Height : 14.47 m. Design spillway Capacity - 1613 m3/sec. Sr No in National Register of Large Dams 2009 : MH09MH0082	NA 19/11/2020	Shri. P.B.Jadhav Ex.Engr., JID, Jalna	Earthen Embankment W.W Bar & T.C	Top of dam is settled down to the extent of 0.30 m from TBL (B1) Heav leakages are observed through masonry @ 1 cusecs of w.w. bar. (B7)	Restore the dam section to design section Necessary repairs should be carried out to stop leakages.	Not Received

SR NO	DAM FEATURES	DATE OF INSPECTION	INSPECTING OFFICER	MAIN COMPONE NT OF DAM	SIGNIFICANT DEFICIENCIES NOTICED.	REMEDIAL MEASURES SUGGESTED	Implementation Status
1	2	3	4	5	6	7	8
2) E	xecutive Engineer, Aurangabad Irri	gation Division,	Aurangabad				
5	Name : <b>SOYEGAON</b> Date of completion : 1967 Location : Longitude : 75°35'00' Latitude : 20°33'00" Gross Capacity : 2.54 Mm3 Height : 17.50m. Design spillway Capacity 480 m3/sec. Sr No in National Register of Large Dams 2009 : <b>MH09MH0148</b>	30/5/2020 8/12/2020	Shri. A.M.Nimbhore Ex.Engr., AID, Aurangabad	W.W.Bar & TC	Body of w.w bar is damaged. (B7) Stilling basin is damaged slightly. (A14) Guide bund is damaged at some portion (A16)	Necessary repairs should be carried out. Necessary repairs should be carried out. Necessary repairs should be carried out.	Not Received
6	Name : BANOTIDateof completion : 1968Location :Longitude : 75°20'00'Latitude : 19°56'50"Gross Capacity : 3.22 Mm3Height : 19.50m.Design spillway Capacity 525 m3/sec.Sr No in National Register of LargeDams 2009 :MH09MH0165	30/5/2020 15/12/2020	Shri. A.M.Nimbhore Ex.Engr., AID, Aurangabad	Outlet W.W.Bar & TC	Outlet well & gate are damaged and needs complete renovation (A6) Masonry of w.w. bar is not in good condition (B7) Heavy leakages noticed near spillway bar in masonry flank wall. (A15) Retrogression/scouring is noticed in tail channel. (A7)	Necessary repairs should be carried out with the help of Mechanical Organisation. Necessary repairs should be carried out Necessary repairs should be carried out to stop the leakages Necessary repairs should be carried out	Not Received

SR NO	DAM FEATURES	DATE OF INSPECTION	INSPECTING OFFICER	MAIN COMPONE NT OF DAM	SIGNIFICANT DEFICIENCIES NOTICED.	REMEDIAL MEASURES SUGGESTED	Implementatio n Status
1	2	3	4	5	6	7	8
7	Name : <b>AMBADI</b> Date of completion : 1975 Location :	25/5/2020 22/12/2020	Shri. A.M.Nimbhore Ex.Engr., AID,	Earthen Embankment	Settlement observed at RD 700 to 1200 m (B3)	Restore the dam section to design section.	Not Received
	Longitude : 75°6'00' Latitude : 20°56'00" Gross Capacity : 12 Mm3 Height : 20 m. Design spillway Capacity 1412 m3/sec. Sr No in National Register of Large Dams 2009 : MH09MH0737		Aurangabad	Outlet	Slab of LBC HR is collapsed.(A6)	Necessary repairs should be carried out	
8	Name : <b>KALDARI</b> Date of completion : 2000 Location : Longitude : 75°15' 30' Latitude : 20°29'00" Gross Capacity : 30.90 Mm3 Height : 17.70m. Design spillway Capacity 360 m3/sec. Sr No in National Register of Large Dams 2009 :	30/5/2020 15/12/2020	Shri. A.M.Nimbhore Ex.Engr., AID, Aurangabad	Earthen Embankment W.W Bar & T.C	Dam is under section throughout the length. (B1) Guide wall is damaged due to heavy flood. (A16) Leakages observed through masonry components. (B7)	Restore the dam section to design section. Necessary arrangements to guide the flood should be provided. Necessary arrangements to stop leakage should be provided.	Not Received
9	Name : <b>SANJUL</b> Date of completion : 1967 Location : Longitude : 75°25'00' Latitude : 20°07'00" Gross Capacity : 3.08 Mm3 Height : 210m. Design spillway Capacity 542 m3/sec. Sr No in National Register of Large Dams 2009 : <b>MH09MH0149</b>	2/6/2020 9/11/2020	Shri. A.M.Nimbhore Ex.Engr., AID, Aurangabad	Earthen Embankment Outlet W.W Bar & T.C	Crest profile not at proper elevation. (B1) Outlet well and outlet gate are totally damaged. Needs reconstruction. (A6) W.W.bar is not in good condition.Cracks in the masonry and holes to d/s are noticed. (B7)	Restore the dam section to design section. Necessary repairs should be carried out Necessary repairs should be carried out	Not Received

SR NO	DAM FEATURES	DATE OF INSPECTION	INSPECTING OFFICER	MAIN COMPONE NT OF DAM	SIGNIFICANT DEFICIENCIES NOTICED.	REMEDIAL MEASURES SUGGESTED	Implementati on Status
1	2	3	4	5	6	7	8
10	Name : <b>GIRIJA</b> Date of completion : 1986 Location : Longitude : 75°20'15' Latitude : 20°06'00" Gross Capacity :24.500 Mm3 Height : 19.10 m. Design spillway Capacity 1620 m3/sec	2/6/2020 9/11/20220	Shri. A.M.Nimbhore Ex.Engr., AID, Aurangabad	Earthen Embankment W.W. bar & TC	Relief wells are not in working condition. (A5) Seepage through w.w. bar is observed. (B7)	Necessary cleaning and surging of wells should be carried out immediately. To stop leakage, RCC jacketing to W.W. bar should be provided.	Not Received
	Sr No in National Register of Large Dams 2009 : MH09MH1139						
II) S	uperintending Engineer & Adminis	strator CADA, La	atur				
1) Ex	xecutive Engineer, Latur Irrigation	Division - 2, Latu	ır				
11	Name :- <b>ANANDWADI (ST)</b> Date of completion :- 2002 Longitude :- 76 49' 15"	21/5/2020 8/1/2021	Smt. Thombre Shri. A.N.Madne,	Earthen Embankment	Settlement of 0.50 to 0.60 m observed between Ch.150 to 210 m. (B3)	Restore the dam section to designed section.	Not Received
	Latitude :- 18□ 22' 30" Height :- 18.80 m Gross capacity :- 2.026 Mm <sup>3</sup>		EE,LID-2, Latur	W.W Bar & T.C	Scouring at D/s side of w.w. bar up to foundation level noticed (A7)	Provide necessary work / arrangement to prevent scouring	
	Design Spillway capacity :- 256.84 m3/sec. Sr. No. in National regi. Of large Dams 2009 :- MH09MH1607				Damages observed at guide wall/divide wall and appurtences. (A16) Retrogression/scouring in tail channel noticed. (A7)	Appropriate measures or repairs should be carried out. Overburdens should be removed to make the effective flow of water in tail channel	1

SR NO	DAM FEATURES	DATE OF INSPECTION	INSPECTING OFFICER	MAIN COMPONE NT OF DAM	SIGNIFICANT DEFICIENCIES NOTICED.	REMEDIAL MEASURES SUGGESTED	Implementation Status
1	2	3	4	5	6	7	8
12	Name :- KENDREWADI (ST) Date of completion :- 2013 Longitude :- 76°44'15"	21/5/2020 24/1/2021	Smt. Thombre Shri. A.N.Madne,	W.W Bar & T.C.	Spillway bar is in bad condition.(B7)	Necessary repairs should be carried out.	Not Received
	Latitude :- 18°37'00" Height :- 15.80m Gross capacity :- 2.258Mm <sup>3</sup> Design Spillway capacity :-		EE,LID-2, Latur		Guide bund is washed out / damaged and the material is spread out in nearby field & river portion (A16)	Appropriate measures or repairs should be carried out.	
	305.344 m3/sec. Sr. No. in National regi. Of large Dams 2009 :- MH09MH2278				Right side guide bund damaged due to heavy rain in 9/2016	Necessary repairs should be carried out	
13	Name :- HALAD WADHONA (ST) Date of completion :- 2001 Longitude :- 77°13'55" Latitude :- 18°36'35" Height :- 19.15m Gross capacity :- 3.693 Mm <sup>3</sup> Design Spillway capacity :- 442.28 m3/sec. Sr. No. in National regi. Of large Dams 2009 :- MH09LH1510	23/5/2020 20/1/2021	Smt. Thombre Shri. A.N.Madne, EE,LID-2, Latur	W.W.Bar& TC	32 m long and 0.90 m in height of w.w. bar not constructed.(B7) Guide wall is broken in 4 patches and protection bund in 10 m length (A16) Guide bund is broken in some patches. (A16)	Balance work should be completed immediately. Necessary repairs should be carried out. Necessary repairs should be carried out.	Not Received
14	Name :- SONALA(ST) Date of completion :- 2006 Longitude :- 77°08'10" Latitude :- 18°35'16" Height :- 16.3m Gross capacity :- 5.491Mm <sup>3</sup> Design Spillway capacity :- 1119 m3/sec. Sr. No. in National regi. Of large Dams 2009 :- MH09MH2289	23/1/2020 23/1/2021	Smt. Thombre Shri. A.N.Madne, EE,LID-2, Latur	Earthen Embankment W.W.Bar & TC	Few quantity of Standing water observed at junction of guide wall & embankment noticed. (A2) Scouring at D/s side of w.w. bar up to foundation level noticed (A7 At Ch.50 to 150 m, guide divide wall is damaged. (A16)	Leakage should be located, monitored & necessary repair work should be carried out to prevent leakages. Provide necessary work / arrangement to prevent scouring Appropriate measures or repairs should be carried out.	Not Received

SR NO	DAM FEATURES	DATE OF INSPECTION	INSPECTING OFFICER	MAIN COMPONE NT OF DAM	SIGNIFICANT DEFICIENCIES NOTICED.	REMEDIAL MEASURES SUGGESTED	Implementation Status
1	2	3	4	5	6	7	8
15	Name :- DONGARGAON (ST) Date of completion :- 2008 Longitude :- 77°12'00" Latitude :- 18°34'00" Height :- 18.96m Gross capacity :- 3.627Mm <sup>3</sup> Design Spillway capacity :- 429.767 m3/sec. Sr. No. in National regi. Of large Dams 2009 :-	23/5/2020 23/1/2021 9/2/2021	Smt. Thombre Shri. A.N.Madne, EE,LID-2, Latur Shri. C.T.Mondhe EE,DSO- 3,Nashik	W.W.Bar & TC	Drop wall 1,7,2 has badly damaged. (A16)	Necessary repairs / reconstruction of drop wall should be carried out.	Not Received
16	MH09MH1093Name :- NAGZARI (ST)Date of completion :- 2005Longitude :- 76°76'00"Latitude :-Height :- 17.33 mGross capacity :- 1.458Mm³Design Spillway capacity :-127.28 m3/sec.Sr. No. in National regi. Of largeDams 2009 :-MH09MH1057	5/5/2020 22/12/2020 9/2/2021	Smt. Thombre Shri. A.N.Madne, EE,LID-2, Latur Shri. C.T.Mondhe EE,DSO-3, Nashik	W.W.Bar & TC	Seepage of water at the junction of embankment ans spillway wing wall/abutment is noticed. (@ 10 HP motor) (A3)	Provide necessary work / arrangement to stop the seepages.	Not Received
17	Name :- ANDHORI (ST) Date of completion :- 2006 Longitude :- 76°47'00" Latitude :- 18°46'00" Height :- 17.00m Gross capacity :- 2.1624 Mm <sup>3</sup> Design Spillway capacity :- 192.98 m3/sec. Sr. No. in National regi. Of large Dams 2009 :- MH09MH2267	8/5/2020 22/12/2020	Smt. Thombre Shri. A.N.Madne, EE,LID-2, Latur	W.W.Bar& TC	Nearly parallel side of the guide wall trenches are found out of 2 to 2.5m in depth and 2 to 3.5 m in width throughout the guide wall. (A16) Guide bund pitching of both side damaged. (B3) Retrogression / souring at side of guide wall is noticed. (A7)	Necessary repairs should be carried out. Necessary repairs should be carried out. Provide necessary work / arrangement to prevent scouring	Not Received

SR NO	DAM FEATURES	DATE OF INSPECTION	INSPECTING OFFICER	MAIN COMPONE NT OF DAM	SIGNIFICANT DEFICIENCIES NOTICED.	REMEDIAL MEASURES SUGGESTED	Implementation Status
1	2	3	4	5	6	7	8
18	Name :- <b>TIRU</b> Date of completion :- 1976 Longitude :- 77°04'06'' Latitude :- 18°25'22''	22/1/2020 22/1/2021	Smt. Thombre Shri. A.N.Madne, EE,LID-2,	Earthen Embankment	Longitudinal cracks observed. (B4)	Cracks should be monitored and necessary repairs should be carried out to fill the cracks.	Not Received
	Height :- 21.00m Gross capacity :- 23.32Mm <sup>3</sup> Design Spillway capacity :- 1994 m3/sec. Sr. No. in National regi. Of large Dams 2009 :- MH09MH0595		Latur	W.W.Bar & TC	Automatic gates - 71 nos. are not operated automatically and not working properly. (A20)	Repairs to automatic gates should be carried out with the help of Mechanical Organisation.	
1) Ez	xecutive Engineer, Osmanabad Irrig	ation Division -	1, Osmanabad				
19	Name : <b>TINTRAJ</b> Date of completion :1985 Location : Longitude : 75□ 31' 00" Latitude : 18□ 36' 00" Gross Capacity: 1.393 Mm3 Height : 15.55 m. Design spillway Capacity 429.76m3/sec. Sr No in National Register of Large Dams 2009 : <b>MH09MH093</b>	13/5/2020 22/10/2020	Shri. S.S.Awate, Ex.Engr., OID- 1, Osmanabad	W.W.Bar & TC	<ul> <li>W.W.Bar is not in good condition. Needs urgent repairs. (B7))</li> <li>Coping over the bar is not in good condition.(B7)</li> <li>Pointing required at u/s and d/s side of w.w. bar.(B8)</li> <li>Heavy damages to tail channel &amp; apron due to scouring. (A7,A14)</li> </ul>	Necessary repairs should be carried out on priority. Necessary repairs should be carried out Necessary repairs should be carried out Necessary repairs should be carried out on priority	Not Received

SR NO	DAM FEATURES	DATE OF INSPECTION	INSPECTING OFFICER	MAIN COMPONE NT OF DAM	SIGNIFICANT DEFICIENCIES NOTICED.	REMEDIAL MEASURES SUGGESTED	Implementation Status
1	2	3	4	5	6	7	8
20	Name : <b>KHANDESHWAR</b> Date of completion :1978 Location : Longitude :75	8/5/2020 17/11/2020	Shri. S.S.Awate, Ex.Engr., OID- 1, Osmanabad	E/dam	Settlement between ch.520 to 630m observed (B3) Longitudinal cracks between ch.520 to 630m noticed. (B4)	Necessary repairs should be carried out. Necessary repairs should be carried out.	Not Received
	18□ 30' 00" Gross Capacity: 10.80 Mm3 Height : 17.14 m.	1/10 /2020	Shri. Y.K.Bhadane, SE, DSO,		Dam section is not as per designed section. (B1)	Necessary repairs should be carried out.	
	1307 m3/sec. Sr No in National Register of Large		Nashik		Settlement of pitching is noticed.(B3)	Necessary repairs should be carried out to restore to the design section	
	MH09MH0730			Drains	Pitching is disturbed (3.9)	Pitching should be relayed/rstored.	
				Outlet	Outlet gate does not function properly. (B5	Necessary repairs should be carried out.	
				W.W. Bar & TC	W.W. bar is not in good condition. Needs to reconstruct between ch.220 to 345 (B7)	Necessary repairs should be carried out with the help of Mechanical Organisation	
					Coping, d/s side pointing needed. (B8)	Necessary repairs should be carried out before monsoon.	
III)	Superintending Engineer & Admin	istrator CADA, B	Beed				
1) Ez	xecutive Engineer, Jayakwadi Irriga	tion Division - 3,	Beed				
21	Name :- <b>BINDUSURA</b> Date of completion :- 1955 Location : - Longitude :- 75 44' 30" Latitude :- 18 45' 45"	1/5/2020 7/11/2020	Shri. D.B.Lokre Ex.Engr., JID-3, Beed	E/DAM	There is standing pool of water at ch. 371 m. (A2)	The D/S area of W. W. bar at least up to 200m, from bar shall be free from standing pool. Dewatering should also be carried out.	Not Received
	Height :- 18.00 m Gross capacity :- 9.57Mm <sup>3</sup> Design Spillway capacity :- 1654 m3/sec. Sr. No. in National regi. Of large Dams 2009 :- MH09MH0072			W.W. Bar. & T/C.	Masonry of Spillway bar damaged in some portion. There is leakage in some portion. (B7)	Masonry of Spillway bar should be repaired. Repair work to prevent leakages should be carried out.	

SR NO	DAM FEATURES	DATE OF INSPECTION	INSPECTING OFFICER	MAIN COMPONE NT OF DAM	SIGNIFICANT DEFICIENCIES NOTICED.	REMEDIAL MEASURES SUGGESTED	Implementation Status
1	2	3	4	5	6	7	8
22	Name :- LOKARWADI	1/5/2020	Shri. D.B.Lokre	Outlet	Leakage is observed at nalla level	Necessary repairs should be	Not Received
	Date of completion :- 2001	7/11/2020	Ex.Engr., JID-3,		(Discharge 0.30 cusecs) (B12)	carried out to prevent leakages.	
	Location : -		Beed				
	Longitude :- 75° 54' 00"				Leakage through H.R and E/W	Provide necessary arrangement	
	Latitude :- 18° 54' 00"				joint (A4)	to prevent standing leakage at	
	Height :- 23.91 m			_		joint of HR & E/W	
	Gross capacity :- 2.23 Mm <sup>3</sup>			W.W. Bar.	Leakages through d/s of w.w.	Necessary repairs should be	
	Design Spillway capacity :-			& T/C.	bar in tail channel from direction	carried out to prevent leakages.	
	341 m3/sec.				of wing wall &w.w. body wall		
	Sr. No. in National regi. Of large				joint observed. (B/)		
	Dams 2009:						
	MH09MH2280	, ,		-			
23	Name :- SULEMAN DEOLA	6/6/2020	Shri. D.B.Lokre	W.W. Bar.	Leakages observed underneath of	Necessary repairs should be	Not Received
	Date of completion :- 2006	11/11/2020	Ex.Engr., JID-3,	& T/C.	spillway bar	carried out to prevent leakages.	
	Location : -		Beed		(A1)		
	Longitude :- 75°1' 40"						
	Latitude :- 13°00' 30"						
	Height :- 19.41 m					NT · 1 111	-
	Gross capacity :- 2.280 Mm <sup>3</sup>				Undermining of guide wall	Necessary repairs should be	
	Design Spillway capacity :-				observed.(A16)	carried out to prevent leakages.	
	m3/sec.				C = 1 = 1 (A 1)	D 1	
	Sr. No. in National regi. Of large				Seepage observed. (A1)	Provide necessary arrangement	
	Dams 2009:					to prevent seepage.	
	MH09MH2290						

SR NO	DAM FEATURES	DATE OF INSPECTION	INSPECTING OFFICER	MAIN COMPONE NT OF DAM	SIGNIFICANT DEFICIENCIES NOTICED.	REMEDIAL MEASURES SUGGESTED	Implementation Status
1	2	3	4	5	6	7	8
1) Ex	kecutive Engineer, Majalgaon Irriga	tion Division, Pa	rali(V), Beed				
24	Name :- KASARI Date of completion :- 1988 Location : - Longitude :- 75 $\square$ 04' 30" Latitude :- 18 $\square$ 45' 00" Height :- 15.52 m Gross capacity :- 0.872 Mm <sup>3</sup> Design Spillway capacity :- 142.80 m <sup>3</sup> /sec. Sr. No. in National regi. Of large Dams 2009 :- MH09MH0854	22/5/2020 4/11/2020	Shri. R.A.Salgarkar Ex.Engr. Maj.Irr.Dn., Parali (V), Beed	Earthen Embankment Outlet	Leakage through downstream slope noticed. (A1) Outlet gate system is totally collapsed. (A6)	Necessary arrangement should be provided to stop leakage. Necessary repairs should be carried out on priority.	Not Received
25	Name :- LIMBACHIWADI-1 Date of completion :- 2005 Location : - Longitude :- 76 $\Box$ 5' 2" Latitude :- 18 $\Box$ 50' 58" Height :- 20.08 m Gross capacity :- 1.414 Mm <sup>3</sup> Design Spillway capacity :- 273 m3/sec. Sr. No. in National regi. Of large Dams 2009 :- MH09MH2087	22/5/2020 6/11/2020	Shri. R.A.Salgarkar Ex.Engr. Maj.Irr.Dn., Parali (V), Beed	W.W. bar & TC	Wing wall (D/s) is damaged. Leakage from junction of bar and wing wall noticed. (A3)	Necessary arrangement should be provided to stop leakage on priority.	Not Received

SR NO	DAM FEATURES	DATE OF INSPECTION	INSPECTING OFFICER	MAIN COMPONE NT OF DAM	SIGNIFICANT DEFICIENCIES NOTICED.	REMEDIAL MEASURES SUGGESTED	Implementation Status
1	2	3	4	5	6	7	
26	Name :- LIMBACHIWADI-2	22/5/2020	Shri.	\W.W. bar &	Wing wall $(D/s)$ is damaged. Leakage	Necessary arrangement should be	Not Received
	Date of completion :- 2006	6/11/2020	R.A.Salgarkar	ТС	from junction of bar and wing wall	provided to stop leakage on priority.	
	Location : -		Ex.Engr.		noticed. (A3)		
	Longitude :- 76 06' 03"		Maj.Irr.Dn.,		EDA arrangement totally collapsed.	Necessary arrangement should be	
	Latitude :- 18 04' 41"		Parali (V), Beed		(A14)	provided to stop leakage on priority	
	Height :- 17.95 m						
	Gross capacity :- 1.40 Mm <sup>3</sup>						
	Design Spillway capacity :-						
	661.50 m3/sec.						
	Sr. No. in National regi. Of large						
	Dams 2009 :-						
	MH09MH2088						
27	Name :- DETHEWADI	22/5/2020	Shri.	W.W. bar &	Leakage through joint of earthen	Necessary arrangement should be	Not Received
	Date of completion :- 2005	19/11/2020	R.A.Salgarkar	TC	dam and wing wall (d/s) Leakage	provided to stop leakage on priority.	
	Location : -		Ex.Engr.		noticed. (A1)		
	Longitude :- $75\Box$ 58' 51"		Maj.Irr.Dn.,		Scouring in tail channel is noticed.	Necessary arrangement should be	
	Latitude :- 18 52' 48"		Parali (V), Beed		(A7)	provided to stop scouring.	
	Height :- 21.88 m						
	Gross capacity :- 1.409 Mm <sup>3</sup>						
	Design Spillway capacity :-						
	236.80 m3/sec.						
	Sr. No. in National regi. Of large						
	Dams 2009 :-						
	MH09MH1649						

SR NO	DAM FEATURES	DATE OF INSPECTION	INSPECTING OFFICER	MAIN COMPONE NT OF DAM	SIGNIFICANT DEFICIENCIES NOTICED.	REMEDIAL MEASURES SUGGESTED	Implementation Status		
1	2	3	4	5	6	7	8		
B) C	hief Engineer, WR, Aurangabad								
I) Superintending Engineer, NIC, Nanded									
1) Executive Engineer, NID (North), Nanded									
28	Name : <b>DONGARGAON</b> Date of completion : 1984 Location : Longitude : 78 09' 30" Latitude : 19 26' 30" Gross Capacity :9.607Mm3 Height : 22.60 m. Design spillway Capacity 728.97 m3/sec. Sr No in National Register of Large Dams 2009 : MH09LH1028	30/5/2020 23/11/2020 9/2/2021	Shri. N.P.Gavhane EE, NID (North), Nanded Shri. C.T.Mondhe EE,DSO- 3,Nashik	W.W.Bar & TC	<ul> <li>W.W.bar is not in good condition.</li> <li>Leakage through body is observed.(B7)</li> <li>U/s &amp; D/s side of bar needs coping. (B7)</li> <li>Guide wall and divide walls are fully damaged.(3.16)</li> <li>Scouring of rocks at base of w.w. bar observed. Nearly 1-1.5 m</li> <li>depth pot holes are formed. (3.19)</li> </ul>	Necessary repairs should be carried out Jacketing may be provided. Coping/Jacketing may be provided. Necessary repairs should be carried out. Necessary repairs should be carried out.	Not Received		
1) Ez	ecutive Engineer, NID (South), Na	nded							
29	Name : <b>SONPETHWADI</b> Date of completion : 1974 Location : Longitude : 77 20' 00" Latitude : 18 70' 00" Gross Capacity :1.695Mm3 Height : 15.10 m. Design spillway Capacity 274.20 m3/sec. Sr No in National Register of Large Dams 2009 : MH09MH0535	22/6/2020 17/12/2020 19/1/2021	Shri.N.V.Pattew ar EE, NID (South), Nanded Shri.C.T.Mondh e EE,DSO- 3,Nashik	W.W.Bar & TC	Scouring is observed on d/s side of bar. Cavity is formed below foundation due to heavy scouring. (B7)	Necessary repairs should be carried out to stop scouring.	Not Received		

SR NO	DAM FEATURES	DATE OF INSPECTION	INSPECTING OFFICER	MAIN COMPONE NT OF DAM	SIGNIFICANT DEFICIENCIES NOTICED.	REMEDIAL MEASURES SUGGESTED	Implementation Status
1	2	3	4	5	6	7	8
30	Name : YEDUR (ST)	22/6/2020	Shri.	W.W.Bar & TC	W.W. bar is not in good condition.	Necessary repairs should be	Not Received
	Date of completion : 2005	27/12/2020	N.V.Pattewar		Leakage through body of W.W.bar is	carried out	
	Location :		EE, NID		observed.(B7)	Jacketing may be provided.	
	Longitude : $77 \sqcup 18' 00''$		(South), Nanded				
	Latitude : $18 \sqcup 38^\circ 00^{\circ\circ}$				Scouring observed d/s of check	Necessary repairs should be	
	Gross Capacity :13.16/Mm3				wall.(3.19)	carried out.	
	Height : 18.01 m.				Guide bund is not in good condition.	Necessary repairs should be	
	Design spillway Capacity				(3.16)	carried out.	
	1/44 m3/sec.					NT 1 111	-
	Dame 2000 :				Scouring observed in tail channel.(3.19)	Necessary repairs should be	
	Danis 2009. MH00MH1646					carried out.	
	14110714111040						
I) Su	perintending Engineer, BIPC, Para	li(V), Beed					
1) Ex	xecutive Engineer, LMID, Latur						
31	Name : GHONSHI M.I.Tank	20/5/2020	Shri. P.R.Shinde	E/Dam	Settlement is noticed. Dam top is	Dam section to be brought to	Not Received
	Date of completion: 1991	6/11/2020	Ex.Engr.,		shrinked 1.0 to 1.50 m depth in chainage	correct design profile and level	
	Location :		LMID, Latur		90 m to 840 m. (B1)	by adding earthwork duly	
	Longitude : 77 09' 20"					compacted properly	
	Latitude : 18 31' 45"				Wet patches at d/s of dam at THL level	Necessary repairs should be	
	Gross Capacity :1.247 Mm3				from RD 270 m to 390 m (A1)	carried out to prevent wet	
	Height : 19.85 m.					patches and leakages.	
	Design spillway Capacity			Outlet	Outlet gate are not open & close	Necessary repairs should be	
	494.08 m3/sec.				smoothly.(B5)	carried out with the help of	
	Sr No in National Register of Large					Mechanical Organisation.	
	Dams 2009 :						
1	MH09LH1226						

# ATR on Category-1 Deficiency in Class-I Dams (Private Owned)

SR.NO.	NAME OF DAM	DATE OF INSPECTION	MAIN COMPONEN T OF DAM	SIGNIFICANT DEFICIENCIES NOTICED	REMEDIAL MEASURES SUGGESTED	IMPLEMENTAT ION STATUS
1	2	3	4	5	6	7
				NIL		

ATR	on Category-	2 Deficiency	in Class-I	[ Dams (	Private	owned)

Sr.No.	Name of Dam	Date of Inspection	Main component of Dam	Significant Deficiencies Noticed	Remedial Measures Suggested	Implementation Status
1	2	3	4	5	6	7
1	2	3	4	5 NIL		7

# ATR on Category-1 Deficiency in Class-II Dams (Private Owned)

Sr.No.	Name of Dam	Date of Inspection	Main component of Dam	Significant Deficiencies Noticed	Remedial Measures Suggested	Implimentation Status
1	2	3	4	5	6	7
				NIL		

# ATR on Category-2 Deficiency in Private Class-II Dams

Sr. No.	Dam Features 2	Date Of Inspection 3	Inspecting Officer 4	Main Component Of Dam 5	Significant Deficiencies Noticed.	Remedial Measures Suggested 7	Implementation Status				
Aurangabad Municipal Corporation, Aurangabad											
1	Name : <b>KHAM ( SANGVI)</b> Date of completion : 1968. Location : Longitude: 75 21' 247"	11/9/2020	Shri. C.T.Mondhe EE, DSD-3, DSO, Nashik.	Drains	Drains are not free from silt & vegetation (B2)	The tail end of C-drains shall be open & cleaned and shall be kept free flowing.	Not Received				
	Latitude : 19 56' 17" Gross Capacity :29.70 Mm3 Height : 10.20 m. Design spillway Capacity			Outlet	Slab of outlet well is damaged & railing and planks are absent. (B5)	Necessary repairs may be carried out					
	N.A. m3/sec. Sr No in National Register of Large Dams 2009 : MH09MH0175				Relevant Documents for inspection of dam not available on site.	It should be maintained on site for inspection					
2	Name : <b>OVER ( HARSUL )</b> Date of completion : 1964 Location : Longitude : 75 19' 56"	11/9/2020	Shri. C.T.Mondhe EE, DSD-3, DSO, Nashik.	E / Dam.	Undulation on top of dam observed.(B1)	Dam section to be brought to correct design profile and level by adding earthwork duly compacted properly.	Not Received				
	Latitude : 19 50' 32" Gross Capacity : N.A Mm3 Height : 16.0 m. Design spillway Capacity			Drains	Drains are not free from silt & Vegetation (B2)	The tail end of C-drains shall be open & cleaned & shall be kept free flowing.					
	N.A. m3/sec. Sr No in National Register of Large Dams 2009 : MH09MH0101				Relevant Documents for inspection of dam not available on site.	It should be maintained on site for inspection.					

Sr. No.	Dam Features 2	Date Of Inspection 3	Inspecting Officer 4	Main Component Of Dam 5	Significant Deficiencies Noticed.	Remedial Measures Suggested 7	Implementation Status
	Jalna Municipal Council, J	alna					
3	Name : <b>GHANEWADI</b> Date of completion : 1975. Location : Longitude: 75 51' 03"	11/9/2020	Shri. C.T.Mondhe EE, DSD-3, DSO, Nashik.	E / Dam	Section of dam is not as per design Section. (B1)	Dam section to be brought to correct design profile and level by adding earthwork duly compacted properly.	Not Received
	Latitude : 19 54' 42" Gross Capacity :14.44 Mm3				Longitudinal cracks is observed. (B4)	Cracks should be filled with appropriate casing material.	
	Height : 16.00 m. Design spillway Capacity N.A. m3/sec. Sr No in National Register of			Drains	Toe drains are not free from silt & vegetation (B3)	The d/s area at least up to above 200m. from toe, shall be free from Stagnation. The area should be well drained.	
	Large Dams 2009 : MH09MH0053			W.W. bar & TC	Various Components of right side w.w. bar is heavily damaged. (B7)	Necessary repairs should be carried out on priority.	
				General	Relevant Documents for inspection of dam not available on site.	It should be maintained on site for inspection.	
	Udgir Municipal Council,	Udgir, Dist. L	atur				
4	Name : <b>BANSHELKI</b> Date of completion : 1968. Location : Longitude: 77 0 05' 32"	10/2/2021	Shri. C.T.Mondhe EE, DSD-3, DSO, Nashik.	E/Dam	Dam section is not as per design. Undulations are noticed. (B1)	Dam section to be brought to correct design profile and level by adding earthwork duly compacted properly.	Not Received
	Latitude: 18 21' 53" Gross Capacity :NA Mm3 Height : 23.00 m. Design spillway Capacity				Pitching is disturbed throughout the dam length. (B3)	Pitching should be relayed /replaced.	
	N.A. m3/sec. Sr No in National Register of Large Dams 2009 : NA			W.W. bar & TC	Scouring is noticed at d/s side of w.w. bar. (3.19)	Necessary arrangements should be provided to stop scouring.	



# Part-3: Dam Health Status Report of Pre & Post Monsoon 2021

## 3.1 General:

Dam Safety Division No. 3 under Dam Safety Organization, Nashik exercise compilation of Annual Pre & Post Inspection Reports of Dams submitted by Field Offices as well as Test Inspection Reports of Selected Dams carried out by Dam Safety Organization, Nashik in the form of Annual Dam Health Status Report (ADHSR).

#### 3.2 Inspection Reports submitted by Field Offices :

In all there are 280 Government owned Dams & 4 Private owned Dams are monitored by Dam Safety Organization, Nashik from safety point of view.

280 Government owned Dams constitute 37 Class-I &243 Class-II Dams. Private owned Dams constitute 4 Class-II Dams.

Government owned Dams :Pre Monsoon Reports were received for 262 Dams. However, out of 280 Dams, Post Monsoon Reports were received from 215 Dams. 13 Class-I &52 class-II Dams Reports were not received in DSO. [Ref. Table 3.1 & 3.2]

#### 3.3 Test Dam Inspection by Dam Safety Organisation :

Test Inspection Programme for Test Inspection of selected Dams is approved by Director General, DTHRS, MERI, Nashik.

As per approved Annual Test Dam Inspection Programme, Class-I Dams are inspected by SE, DSO along with EE, DSD & Class-II Dams are inspected by EE, DSD, Nashik.

On similar lines in case of Private owned Dams, full fledged inspection of Class-I Dam is carried out by SE, DSO along with EE, DSD & Class-II Dam is carried out by EE, DSD, Nashik.

**Government owned Dams :**100% Dams ( 6 Class-I, 29 Class-II) as proposed for test inspection were inspected by team of Dam Safety Organization, Nashik. *[Ref. Table 3.5]* 

Private owned Dams Pre monsoon inspection & Post Monsoon Inspections for all 4 Dams were carried out by DSO. /Ref. Table 3.3 & 3.4]

#### Following team of officers have inspected targeted Dams in Marathwada region

- 1) Shri M.S.Amle, Superintending Engineer Dam Safety Organization, Nashik
- 2) Shri P.S.Patare, Executive Engineer, Dam Safety Division No.3, Nashik (A.C.)
- 3) Shri C.T.Mondhe, Sub Divisional Engineer, Dam Safety Division No.3, Nashik
- 4) Smt. P.P.Bhoye, Junior Engineer, Dam Safety Division No.3, Nashik

#### And Following team of officers have taken efforts to prepare this report.

- 1) Shri M.S.Amle, Superintending Engineer Dam Safety Organization, Nashik
- 2) Shri P.S.Patare,, Executive Engineer, Dam Safety Division No.3, Nashik (A.C.)
- 3) Shri R.P.Aradwad, Sub Divisional Officer, Dam Safety Division No.3, Nashik
- 4) Shri.A.V.Mendgule Sub Divisional Engineer, Dam Safety Division No.3, Nashik
- 5) Smt. P.P.Bhoye, Junior Engineer, Dam Safety Division No.3, Nashik

#### 3.4 Health Status of Class-I & Class-II Dams (Government owned)

This report excerpts details of Deficiencies received from Pre & Post Monsoon Inspections Reports based on detailed inspections carried out by concerned field Superintending Engineer for Class-I Dams & Executive Engineer for Class-II Dams.

And it also covers test inspection carried out by team of officers from Dam Safety Organization, Nashik.

Sr.	Category	T D	otal ams	Rep	ports E	receiv SO	ed in		Са	.t 1			Са	.t 2		Cat 3			
INO.	Class	Ι	II		Ι	Ι	Ι	]	[	Ι	Ι		[	]	Ι		Ι		II
	No. of			Pre	post	Pre	post	Dam	Deficiency	Dam	Deficiency	Dam	Deficiency	Dam	Deficiency	Dam	Deficiency	Dam	Deficiency
1	WRD	37	243	29	24	232	190	0	0	0	0	5	80	23	80	37	431	234	1211
2	Private	0	4	0	0	4	4	0	0	0	0	0	0	4	10	0	0	4	61
	Total	37	247	29	24	236	194	0	0	0	0	5	80	27	90	37	431	238	1272

## 3.5 A Graphical Representation of Deficiencies attended, Submission of Pre/Post Monsoon Reports, Category wise Deficiencies, Class wise of Deficiencies is appended in Annexure I.

3.6 Selected Snapshots of DSO Test Inspection Test Inspections are compiled in Annexure II.

#### 3.7.1 Frequent deficiencies Class-I Dams

- 1. A 18 :Wire ropes of hoist not in good condition/hoisting structure damaged/cracked (02 Dam)
- 2. A 12 : Excesssive considerable leaching from seepage water. (02 Dam)
- 3. A-11 : Sweating/seepages through downstream of masonry dams. (02 Dams)
- 4. A.1: Boil leakage/ seepage/ wet patches/ slushiness in Earthen Dam (02 Dam)
- 5. A 2: Standing pool / Ponding / Water Logging / Slushy condition on D/S of Dam (04 Dam)

#### 3.7.2 Frequent deficiencies Class-II Dams

- 1. **B** 7: Waste weir/waste weir bar not in good condition/coping damaged/leakage through waste weir. (09 Dam)
- 2. A 7 : Retrogression / scouring in tail channel (04 Dam)
- A-16 Damages/foundation erosion/scouring / undermining observed in vicinity of flank walls/guide walls / junction wall / return valves (03 Nos)
- 4. A 14 : EDA / Stilling basin damaged/Hydraulic performance not good (02 Dam)
- 5. A-1: Boil leakage/ seepage/ wet patches/ slushiness in Earthen Dam (02 Dam)

#### 3.8 Points of Attention :

Sr. No.	Expected Inspection Report in DSO	Pre & P Monsov Inspect Report Rec in tim	ost on ion ceived e	Pre & P Monso Inspect Report I Received time	ost on ion Not d in	Pre & P Monso Inspect Report I Receive	ost on ion Not ed
		Number	%	Number	%	Number	%
1	560	68	12.14	407	73	85	15.17

1) This overview provides condensed summary of deficiencies noticed in the Pre & Post Monsoon Inspection Reports Received in DSO & also during test inspection conducted by DSO Officials. Field Officers / Owners of the Dams are required to pay attention to Deficiencies pointed out in ADHSR to maintain Dams in Safe condition.

2) The Chief Engineers are requested to flag this issue and compel all Superintending Engineer & Executive Engineer of concerned Dams to carry out periodic inspections and submit report to D.S.O. in time

# Table 3.1

# Status of Receipt of Pre & Post Monsoon Inspection Reports 2021

Sr. No.	Name of Office E In Repo		Expecte aspection fort in I	ed on DSO	Pre In Repo (By	Pre Monsoon F Inspection eport Received in time Re (By 30 <sup>th</sup> June) (			Monse spection port N ived in 30 <sup>th</sup> Ju	oon on lot time ine)	Pre In Re R	Monso spectio port N leceive	oon on lot d	Post Monsoon Inspection Report Received in time (By 31 <sup>st</sup> Dec)			Post Monsoon Inspection Report Not Received in time (By 31st Dec)			Post Monsoon Inspection Report Not Received		
		Class-I	Class-II	Total	Class-I	Class-II	Total	Class-I	Class-II	Total	Class-I	Class-II	Total	Class-I	Class-II	Total	Class-I	Class-II	Total	Class-I	Class-II	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
	A ) Chief Engineer & Chie	f Adm	inistra	tor, CA	ADA, A	Aurang	gabad															
1	SE,CADA, Aurangabad	09	44	53	0	1	1	9	40	49	0	3	3	0	0	0	9	15	24	0	29	29
2	SE,CADA, Beed	01	59	60	0	28	28	1	31	32	0	0	0	0	0	0	1	59	60	0	0	0
3	SE, CADA, Latur	13	89	102	0	0	0	5	85	90	8	4	12	0	20	20	13	65	78	0	4	4
	B ) Chief Engineer, Water	Resou	rces, A	Aurang	abad																	
4	SE,BIPC, Parali (V)	01	08	09	0	8	8	1	0	1	0	0	0	0	0	0	1	2	3	0	6	6
5	SE,AIC, Aurangabad	01	11	12	0	0	0	1	11	12	0	0	0	0	0	0	0	0	0	1	11	12
6	SE, NIC, Nanded	12	32	44	0	11	11	12	17	29	0	4	4	0	0	0	0	29	29	12	3	15
	Total	37	243	280	0	48	48	29	184	213	8	11	19	0	20	20	24	170	194	13	53	66

Table 3.2Dams for which Inspection Report of 2021 is not received in DSO

Sr.	Pre & Post Monsoon	Report Not Received	Either Pre or Post Inspection Not Report										
No.	(В	otn)	Pre Mon	soon	Pos	t Monsoon							
	Class-I	Class-II	Class-I	Class-II	Class-I	Class-II							
1	2	3	4	5	6	7							
	A ) Chief Engineer 8	c Chief Administrator, C	ADA, Aurangabad										
	I) Superintending	Engineer & Administrat	or, C.A.D.A, Aurangab	ad									
	1) Executive Engine	er, Nandur Madhmeshv	var Irrigation Dn., Vaijaj	pur, Dist. Aurangabao	1								
1		Bhilawani				Tembhapuri							
2		Manyad											
	1) Executive Engine	er, Jayakwadi Irrigatior	n Dn. 2 Parabhani			I							
		Pimpaldari (Gangakhed)											
	2) Executive Engine	er, Aurangabad Irrigatio	on Division, Aurangabac	1									
3						Ajanta Andhari							
4						Ambadi							
5						Banoti							
6						Chapner							
7						Devhari							
8						Dheku							
9						Girija							
10						Gadadgad							
11						Kaldari							
12						Loni (Kannad)							
13						Nimbhora							

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14					Nirgudi
15					Sanjul
16					Soygaon
17					Sukhana
18					Varthan
19					Waghdara
20					Ajanta Palashi / Anjana Palshi
21					Purna Neopur
22					Pardari ST
	II) Superintending E	Engineer, CADA, Lat	ur		
	1) Executive Enginee	er, Latur Irrigation Dn	1, Latur		
23		Bhusni LL Barrage	Khulgapur HL Barrage		
24		Tawarja	Bindgihal LT Barrage		
25		Kasarbalkund	Sai HL Barrage		
26			Takalgaon Devla HL Barrage		
27			Shivni HL Barrage		
28			Hosur Barrage		
29			Dhanegaon HL Barrage		
30			Karsa Pohregaon Barrage		
	2) Executive Enginee	er ,Jalna Irrigation Div	ision, Jalna		
31					Dhoksal
32					Pimparkhed (Partur)

	2) Executive Engine	eer, Latur Irrigation Dn	2, Latur			
33		Panharwadi MI Tank				
	A) Chief Engineer,	WR, Aurangabad			·	·
	I) Superintending	Engineer, AIC, Aurang	abad			
	1) Executive Engine	eer, Minor Irrigation Dr	n1, Aurangabad			
34					Shivna Takli	Rawala M I Tank
35						Nimkhedi
36						Phulambri L.M.I. Project
37						Halda Jalki M.I.Tank
38						Kolwadi M.I.Tank (Lokar)
39						Pimpalwadi M.I.Tank
	2) Executive Engine	er, Jalna Minor Irrigatio	on Division, Jalna			
40						Chandai Ekko LMP
41						Banegaon LMP
42						Palaskheda LMP
43						Taltondi MI Tank
44						Pimpalwadi ST
II)	Superintending Engi	ineer, Nanded Irrigation	n Circle, Nanded			
	1) Executive Engine	eer, Nanded Irrigation l	Division, (South), Nand	led		
45		Wazar (Degloor)			Lower Manar	
46				Shirur	Upper Manar	
47				Sonpethwadi		

	2 ) Executive Engine	eer, Nanded Irrigation	Division, (North), Nat	nded		
48					Balegaon H L Barrage	
49					Vishnupuri Barrage	
50					Digras Barrage	
51					Babhali Barrage	
52					Amdura	
	3)Executive Engineer	, UPPD No 1, Nanded	1			·
53					Isapur (Upper penganga)	
	4)Executive Engineer	, PID, Basmatnagar				
54					Yeldari	
55					Siddheshwar	
	5)Executive Engineer	, MID,Parbhani				·
56					Mudghal HL Barrage	
57					Dhalegaon HL Barrage	
	6)Executive Engineer	, Lendi Project Divisi	on, Degloor			
58		Undri -Manjri				
	I) Superintending E	ngineer, BIPC, Parali	(V). Dist.Beed			
	1) Executive Enginee	er, Beed Irrigation Dn,	, Beed			
59						Nandagul S.T.
60						Chanai ST-2
61						Sarfarajpur ST
62						Sakud ST-2
63						Surnerwadi ST
64						Morphali

## Table 3.3

Sr. No.	Name of Office	To b 1	e Inspo by DSC	ected )	Pre Ins (By	Monse pection time 30 <sup>th</sup> Ju	oon n in 1ne)	Pre Insp (By	Monsection in time 30 <sup>th</sup> Ju	oon Not e une)	Pre Monsoon Not Inspected by DSO		Post Monsoon Inspection in time (By 31st Dec)		Post Monsoon Inspection Not in time (By 31 <sup>st</sup> Dec)			Post Monsoon Not Inspected by DSO				
		Class-I	Class-II	Total	Class-I	Class-II	Total	Class-I	Class-II	Total	Class-I	Class-II	Total	Class-I	Class-II	Total	Class-I	Class-II	Total	Class-I	Class-II	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	Commissioner, Aurangabad Municipal Corporation, Aurangabad	0	2	2	0	2	2	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0
2	Jalna Municipal Council, Jalna	0	1	1	0	1	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
3	Udgir Municipal Council, Udgir, Dist. Latur	0	1	1	0	0	0	0	0	0	0	1	1	0	1	1	0	0	0	0	0	0

# Status of Receipt of Pre & Post Monsoon Inspection 2021 by DSO (Private)

# Table 3.4

Sr.	Pre & Post Monsoon H	Report Not Received		Either Pre or Post Inspection Not Report									
No.	(Dot	,	Pre Mo	nsoon	Post Monsoon								
	Class-I	Class-II	Class-I	Class-II	Class-I	Class-II							
1	3	3	4	5	6	7							
	Udgir Municipal												
1	Council, Udgir, Dist.	0	0	1	0	0							
	Latur												

# Dams for which Inspection Not carried out DSO (Private)
# Table 3.5Dams inspected by Dam Safety Organization, Nashik (2021-22)

Sr. No.	Name of Dam	Date of Inspection	Sr. No.	Name of Dam	Date of Inspection				
1	2	3	4	5	6				
Class-I	Dams		Class-II Dams						
A) Chie	f Engineer & Chief Administrator, CAI	DA, Aurangabad							
I ) Supe	rintending Engineer & Administrator	, C.A.D.A, Aurangab	ad						
1) Execu	ıtive Engineer, JID, Jalna		1) Executiv	ve Engineer, JID, Jalna					
			1	Kalyan Pir	25/10/2021				
2) Exec	utive Engineer, NMID, Vaijapur	-	2	Upper Dudhna	25/10/2021				
1	Bor Dahegaon	13/12/2021	3	Jui	25/10/2021				
3) Exec	utive Engineer, JID, Nathnagar (North	), Paithan							
1	Jayakwadi	13/12/2021							
4) Exec	utive Engineer, AID, Aurangabad	-							
			1	Lahuki	27/10/2021				
			2	Nimbora	26/10/2021				
			3	Varthan	26/10/2021				
			4	Waghdara	26/10/2021				
			5	Soyegaon	26/10/2021				
			6	Sukhna	27/10/2021				
			7	Ambadi	26/10/2021				

II) Superintending Engineer, CADA, Beed								
1) Executive Engineer, Majalgaon ID, Parali (V)								
	1	Dharur	23/11/2021					
	2	Bhogalwadi	23/11/2021					
2) Executive Engineer, JID-3,Beed								
	1	Belpara	22/11/2021					
	2	Nimgaon Choba	22/11/2021					
	3	Mankarnika	22/11/2021					
	4	Mehakari	11/11/2021					
	5	Rooty	11/11/2021					

Sr. No.	Name of Dam	Date of Inspection	Sr. No.	Name of Dam	Date of Inspection
1	2	4	5	6	7
B) Chi	ef Engineer (WR) Aurangabad				
III) Supe	erintending Engineer, CADA, Latur				
1) Execu	tive Engineer, OID-1, Osmanabad				
			1	Wadgi	09/11/2021
			2	Jamb	09/11/2021
2) Execu	utive Engineer, OID-2, Osmanabad		•		•
			1	Harani	10/11/2021
			2	Aliyabad (ST)	10/11/2021
			3	Salgara	10/11/2021
			4	Chikundra	10/11/2021
			5	Jalkot ST	10/11/2021
1) Execu	itive Engineer, LID-1, Latur.				
1	Lower Terna	15/12/2021			
2	Masalga	15/12/2021			
2) Execu	tive Engineer, LID-2, Latur.			1	
			1	Sakol	23/11/2021
			2	Tiru	24/11/2021
			3	Gotala	24/11/2021
			4	Borol	23/11/2021
			5	Whati	24/11/2021

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Sr. No.	Name of Dam	Date of Inspection	Sr. No.	Name of Dam	Date of Inspection
1	2	4	5	6	7
I) Super	intending Engineer, NIC, Nanded				
1) Execu	tive Engineer, UPPD-1, Nanded				
1	Isapur	14/12/2021			
2) Execu	tive Engineer, NID(South), Nanded				
1	Lower Manar	14/12/2021			
Private 1	Dams				
Class-I 1	Dams		Class-II Da	ams	
Auranga	bad Municipal Corporation, Aurangaba	d	1	Kham	25/11/2021
			2	Harsul	25/11/2021
Jalna M	unicipal Council, Jalna		1	Ghanewadi	25/11/2021
Udgir M	unicipal Council, Udgir, Dist.Latur		1	Banshelki	24/11/2021

#### Deficiency Classification(No. of Dam wise)

Sr. No	Authority	Total	Number of	Dams	Numbe	er of Dams (C	Class-I )	Number of	Dams (Cl	lass-II )
		Class-I	Class-II	Total	Def. Cat-1	Def.Cat-2	Def. Cat-3	Cat-1	Cat-2	Cat-3
	Water Resources Department Dams									
А	CE, CADA, Aurangabad	23	192	215	00	01	15	00	18	185
Ι	SE, CADA, Aurangabad	9	44	53	00	00	9	00	05	41
1	EE,JID (North), Paithan	6	0	6	00	00	6	00	00	00
2	EE, AID, Aurangabad	0	24	24	00	00	00	00	01	24
3	EE, NMID, Vaijapur, Dist.Aurangabad	2	3	5	00	00	2	00	00	01
4	EE, JID, Jalna	1	11	12	00	00	1	00	04	11
5	EE, JID-2, Parbhani	0	6	6	00	00	00	00	00	05
II	SE,CADA, Beed	1	59	60	00	00	1	00	05	59
6	EE, MID, Parali(V), Beed	1	28	29	00	00	1	00	04	28
7	EE, JID-3, Beed	0	31	31	00	00	00	00	01	31
III	SE, CADA, Latur	13	89	102	00	01	8	00	08	85
8	EE, OID-1, Osmanabad	0	20	20	00	00	00	00	03	20
9	EE, OID-2, Omerga	0	14	14	00	00	00	00	00	14
10	EE, LID-1, Latur	13	3	16	00	01	8	00	00	00
11	EE, LID-2, Latur	0	52	52	00	00	00	00	05	51
В	CE, WR, Aurangabad	14	51	65	00	04	14	00	05	49
Ι	SE,AIC, Aurangabad	1	11	12	00	01	1	00	00	11
12	EE,MID-1,Aurangabad	1	6	7	01	01	1	00	00	6
13	EE,JMID, Jalna	0	5	5	00	00	00	00	00	5
II	SE,BIPC,Parali(V), Beed	1	8	9	00	00	1	00	01	8
14	EE, LMID, Latur	0	2	2	00	00	00	00	01	2
15	EE, BID, Beed	1	6	7	00	00	1	00	00	6

Sr. No	Authority	Total	Total Number of Dams			er of Dams (C	Class-I )	Number of Dams (Class-II)		
		Class-I	Class-II	Total	Def. Cat-1	Def.Cat-2	Def. Cat-3	Cat-1	Cat-2	Cat-3
	Water Resources Department Dams									
III	SE, NIC, Nanded	12	32	44	00	03	12	00	04	30
16	EE, NID(North), Nanded	5	13	18	00	00	5	00	04	13
17	EE, NID(South), Nanded	2	13	15	00	01	2	00	00	12
18	EE,UPPD-1, Nanded	1	0	1	00	00	1	00	00	00
19	EE,LPD, Degloor	0	2	2	00	00	00	00	00	01
20	EE,PID, Basmatnagar	2	4	6	00	02	2	00	00	04
21	EE,MID,Parbhani	2	0	2	00	00	2	00	00	00
	WRD Total	37	243	280	00	05	37	00	23	234
С	Private Dams									
1	Aurangabad Municipal Corporation, Aurangabad	0	2	2	00	00	00	00	02	02
2	Jalna Municipal Council, Jalna	0	1	1	00	00	00	00	01	01
3	Udgir Municipal Council, Udgir, Dist.Latur	0	1	1	00	00	00	00	01	01
	Private Total	0	4	4	00	00	00	00	04	04
	Grand Total	37	247	284	00	05	37	00	27	238

# Deficiency Classification (No. of Deficiency wise)

		Tatal	1 NT	of Dama				Num	ber of Defi	ciencies			
Sr.	Authority	Total Number of Dams		(	Category–1		Category–2			Category–3		•	
No	Tunionty	Class-I	Class-II	Total	Class- I	Class-II	Total	Class-I	Class-II	Total	Class-I	Class-II	Total
	Water Resources Departmer	nt Dams											
А	CE, CADA, Aurangabad	23	192	215	0	0	0	14	60	61	245	965	1210
Ι	SE, CADA, Aurangabad	9	44	53	0	0	0	00	20	20	130	237	367
1	EE,JID (North), Paithan	6	0	6	0	0	0	00	00	00	65	00	65
2	EE, AID, Aurangabad	0	24	24	0	0	0	00	05	05	00	121	121
3	EE, NMID, Vaijapur, Dist.Aurangabad	2	3	5	0	0	0	00	00	00	42	02	44
4	EE, JID, Jalna	1	11	12	0	0	0	00	15	15	23	90	113
5	EE, JID-2, Parbhani	0	6	6	0	0	0	00	00	00	00	24	24
II	SE,CADA, Beed	1	59	60	0	0	0	00	12	12	17	277	294
6	EE, MID, Parali(V), Beed	1	28	29	0	0	0	00	09	09	17	132	149
7	EE, JID-3, Beed	0	31	31	0	0	0	00	03	03	00	145	145
III	SE, CADA, Latur	13	89	102	0	0	0	14	28	28	98	451	549
8	EE, OID-1, Osmanabad	0	20	20	0	0	0	00	14	14	00	91	91
9	EE, OID-2, Omerga	0	14	14	0	0	0	00	00	00	00	108	108
10	EE, LID-1, Latur	13	3	16	0	0	0	14	00	00	98	00	98
11	EE, LID-2, Latur	0	52	52	0	0	0	00	14	14	00	252	252
В	CE, WR, Aurangabad	14	51	65	0	0	0	44	20	24	186	246	432
Ι	SE,AIC, Aurangabad	1	11	12	0	0	0	12	00	01	25	45	70
12	EE,MID-1,Aurangabad	1	6	7	0	0	0	12	00	01	00	31	31
13	EE,JMID, Jalna	0	5	5	0	0	0	00	00	00	25	14	39

		Tata	Number	ofDomo				Num	ber of Def	iciencies			
Sr.	Authority	Tota	Inumber	of Dams		Category–1		Category–2			Category–3		5
No		Class-I	Class-II	Total	Class- I	Class-II	Total	Class-I	Class-II	Total	Class-I	Class-II	Total
	Water Resources Departmen	t Dams											
II	SE,BIPC,Parali(V), Beed	1	8	9	0	0	0	00	08	08	12	18	30
14	EE, LMID, Latur	0	2	2	0	0	0	00	08	08	00	11	11
15	EE, BID, Beed	1	6	7	0	0	0	00	00	00	12	07	19
III	SE, NIC, Nanded	12	32	44	0	0	0	32	12	12	149	183	332
16	EE, NID(North), Nanded	5	13	18	0	0	0	00	07	07	42	58	100
17	EE, NID(South), Nanded	2	13	15	0	0	0	11	05	06	29	92	121
18	EE,UPPD-1, Nanded	1	0	1	0	0	0	00	00	00	16	00	16
19	EE,LPD, Degloor	0	2	2	0	0	0	00	00	00	00	04	04
20	EE,PID, Basmatnagar	2	4	6	0	0	0	21	00	02	42	29	71
21	EE,MID,Parbhani	2	0	2	0	0	0	00	00	00	20	00	20
	WRD Total	37	243	280	0	0	0	58	80	138	431	1211	1642
С	Private Dams												
1	Aurangabad Municipal Corporation, Aurangabad	0	2	2	0	0	0	0	05	05	0	31	31
2	Jalna Municipal Council, Jalna	0	1	1	0	0	0	0	03	03	0	13	13
3	Udgir Municipal Council, Udgir, Dist.Latur	0	1	1	0	0	0	0	02	02	0	17	17
	Private Total	0	4	4	0	0	0	0	10	10	0	61	61
	Grand Total	37	247	284	0	0	0	58	90	148	431	1272	1703

Category-1 Deficiency	Classification	(Dam wise)
		<b>(</b>

Sr. No	Name of Dam	No. of deficiencies noticed	Sr. No	Name of Dam	No. of deficiencies noticed				
1	2	3	4	5	6				
	Class - I Dams	Class - I Dams Class - II Dams							
		NI	Ĺ						

Sr. No	Name of Dam	No. of deficiencies noticed	Sr. No	Name of Dam	No. of deficiencies noticed			
1	2	3	4	5	6			
Class -	I Dams		Class - II Dams					
A ) Chie	f Engineer & Chief Administrator, CADA, A	urangabad						
I) Supe	rintending Engineer & Administrator, C.A	.D.A, Aurangabad						
1)Execu	tive Engineer, Jalna Irrigation Division, Jaln	a						
			1	Jui	4			
			2	Dhamna	4			
			3	Kalyan Pir	4			
			4	Kalyan Girija	3			
2)Execu	itive Engineer, Aurangabad Irrigation Division	on, Aurangabad		· · ·				
			1	Soyegaon	5			
II ) Supe	erintending Engineer & Administrator, C.A	A.D.A, Latur						
1)Execu	tive Engineer, Latur Irrigation Division-1, La	atur						
1	Manjra	14						
2)Execu	itive Engineer, Latur Irrigation Division-2, L	atur						
			1	Anandwadi	1			
			2	Halad wadhona	4			
			3	Dongargaon	2			
			4	Andhori	3			
			5	Tiru	4			
3)Execu	tive Engineer, Osmanabad Irrigation Division	on-1. Osmanabad						
			1	Tintraj	6			
			2	Khandeshwar	4			
			3	Chanadi	4			

		Table 3.9							
Category	-2 D	eficien	cy C	lass	ification (	(Dam wise)			
			•	•					

S. No	Name of Dam	No. of deficiencies	S. No	Name of Dam	No. of deficiencies		
5r. 1NO	Iname of Dam	noticed	Sr. 1NO	Name of Dam	noticed		
1	2	3	4	5	6		
Class -	I Dams		Class - II Dams				
III ) Sup	perintending Engineer & Administrator, C.	A.D.A, Beed					
1)Execu	tive Engineer, Jayakwadi Irrigation Division	-3, Beed					
			1	Domri	3		
2)Execu	tive Engineer, Majalgaon Irrigation Divisior	n, Parali (V)					
			1	Kasari	2		
			2	Daithana	4		
			3	Limbachiwadi-2	2		
			4	Dethewadi	1		
B) Chie	f Engineer, WR, Aurangabad						
I ) Supe	rintending Engineer, NIC, Nanded						
1)Execu	tive Engineer, NID(North), Nanded						
			1	Dongargaon	4		
			2	Palaiguda	3		
2)Execu	tive Engineer, NID(South), Nanded						
1	Lower Manar	11	1	Sonpethwadi	2		
			2	Yedur	3		
3)Execu	tive Engineer, PID, Basmatnagar						
1	Yeldari	13					
2	Siddheshwar	8					
II ) Sup	erintending Engineer, BIPC, Parali(V)						
1)Execu	tive Engineer, LMID, Latur						
			1	Ghonshi MI Tank	8		
III ) Sup	perintending Engineer, AIC, Aurangabad						
1)Execu	tive Engineer, MID-1, Aurangabad45.						
1	Shivna Takli	12					
	Total	58			80		
-	Private Dams						
Auranga	bad Municipal Corporation, Aurangabad		1	Kham	2		
			2	Over (Harsul)	3		
Jalna M	unicipal Council, Jalna		1	Ghanewadi	4		
Udgir M	lunicipal Council, Udgir, Dist.Latur		1	Banshelki	2		
	Total	0			11		

DSO-ADHSR-2021-22/ MARATHWADA

Grand Total	58		91

# Class-I Dams with Category-1 Deficiency

Sr.	Dam Features	Date of	Inspecting	Main	Observation / Significant	Remedial Measures Suggested
No.		Inspection	Officer	Component of	Deficiencies noticed	
		-		Dam		
1	2	3	4	5	6	7
				NIL		
				- (		

Table 3.11
Class-I Dams with Category-2 Deficiency

Sr. No.	Dam Features	Date of Inspection	Inspecting Officer	Main Component of Dam	Observation / Significant Deficiencies noticed	Remedial Measures Suggested				
1	2	3	4	5	6	7				
A)Cł	A) Chief Engineer, CADA, Aurangabad									
I) Sup	I) Superintending Engineer & Adm., C.A.D.A., Latur									
1) Exe	ecutive Engineer, Latur Irri	gation Division	n-1, Latur							
1	Name :- MANJRA Year of completion :- 1980 Location : - Longitude :- 76 15' 00" Latitude :- 18 55' 00" Height :- 30 m Gross capacity :- 22.40 Mm <sup>3</sup> Design Spillway capacity :- 8370 Cumecs S.N. in National regi. of large Dams 2009 :- MH09MH1585	23/05/2021 22/12/2021	Shri.R.S.Jagtap Shri. A. S. Mehetre, S.E& Adm.,CADA Latur	D/S Drainage	Some drains are not functioning, silting is observed. <b>(B2)</b> Portions of Longitudinal toe drain & exposed cross drains beyond the D/S toe of the dam are not in regular section and freely draining. <b>(B2)</b>	1. Drains should be cleared and desilted for carrying effective flow of water.				
				Foundation	Sufficient lighting is required in drainage gallery. Stand by generator set is required. (A19)	1. Sufficient lighting arrangement should be provided throughout the length of drainage gallery to facilitate the maintenance & inspection of gallery with battery backup facility.				

Sr.	Dam Features	Date of	Inspecting	Main	Observation / Significant	Remedial Measures Suggested
No.		Inspection	Officer	Component	Deficiencies noticed	
		-		of Dam		
1	2	3	4	5	6	7
				Foundation (Body wall)	Gallery seepage is 2 to 5 lps on dt 22.09.2021 at R.L.642.37 m(A10) No separate arrangement to measure seepage from porous pipe.Considerable leaching from the seepage water and deposition of lime near the seepage exit spots. (A12) Minor leakages through body wall of pier no. 1 to 5,7,8,13&14.(A10)	<ol> <li>Source of leakage should be identified chainage wise along the length of gallery of the dam and leakages should be quantified with respect to reservoir water level.</li> <li>Investigations for seepage should be carried out as per relevant provisions mentioned in para5.2.2.2 Investigations for seepage of Manual for Rehabilitation of Large Dams (Page 47 of 112) published by Central Water Commission</li> <li>A discharge measuring device should be properly provided in toe drain in accordance with provisions given in the IS code 14750 (2000) : Code of practice for installation, maintenance and observation of seepage measurement device for Concrete/ Masonry and Earthen/Rock fill dams to measure the seepage 4. Necessary repairs should be carried out with prior approval from competent technical authority.</li> <li>Necessary repairs should be carried out</li> </ol>

Sr.	Dam Features	Date of	Inspecting	Main	Observation / Significant	Remedial Measures Suggested
No.		Inspection	Officer	Component	Deficiencies noticed	
				of Dam		
1	2	3	4	5	6	7
1	<u> </u>		<u>+</u>	Spillway Gates	Leakages through guide wall is decreased than previous observed.(A15) Steel surface of Radial gates needs colouring. Trunion & hoist Bridge & gates on U/S & D/S needs painting.(B11) Minor leakage through some gates.(B12)	<ol> <li>Source of leakage should be identified chainage wise along the length of guide wall and leakages should be quantified with respect to reservoir water level.</li> <li>Investigations for leakage should be carried out as per relevant provisions mentioned in para5.2.2.2 Investigations for leakage of Manual for Rehabilitation of Large Dams (Page 47 of 112) published by Central Water Commission</li> <li>Necessary repairs should be carried out.</li> <li>It may be repaired in consultation with the of Mechanical Organisation.</li> </ol>
				Approach Bridge	Emergency gates, all wire rope, guide tees are rusted. Gates End, Arms holes are missing. Gates both side wire rope are rusted. Gates hoist and gear train covers are very heavy to open and close. <b>(A18)</b> Surface of steel work should be painted. <b>(B11)</b>	<ol> <li>It may be repaired in consultation with the of Mechanical Organisation.</li> <li>It may be repaired in consultation with the of Mechanical Organisation.</li> </ol>

Sr.	Dam Features	Date of	Inspecting	Main	Observation / Significant	Remedial Measures Suggested
No.		Inspection	Officer	Component	Deficiencies noticed	
				of Dam		
1	2	3	4	5	6	7
				Outlet	Emergency & service gates are rusted. Hoist covers are broken.Rubber seal & other parts are not in working condition. <b>(B5)</b>	<ol> <li>Necessary repairs should be carried out with the help of Mechanical Organisation.</li> </ol>
					Stop log gates are not in working condition. <b>(B5)</b>	1. Necessary repairs should be carried out with the help of Mechanical Organisation.
				River outlet /River Sluice	Overall condition of river outlet works/river sluices is not satisfactory,leakage observed @0.10 lps <b>(B5)</b>	1. Necessary repairs should be carried out with the help of Mechanical Organisation.
					Leakage through gate is approx.3.00 lps <b>(B5)</b>	1. Necessary repairs should be carried out with the help of Mechanical Organisation.

B)C	nief Engineer, WR, Auranga	bad							
I) Sup	l) Superintending Engineer , NIC, Nanded								
1) Exe	1) Executive Engineer, NID(South), Nanded								
2	Name :- LOWER MANAR Year of completion :- 1964 Location : - Longitude :- 76 45' 00" Latitude :- 19 4' 30" Height :- 27 m Gross capacity :-139 Mm3 Design Spillway capacity :- 8778 Cumecs Sr. No. in National Register Of large Dams -	24/5/2021 N.R. 14.12.2.021	Shri.S.K.Sabbinwar S.E.,N I.C, Nanded	Earthen Dam	Standing pool of water is observed D/S in gorge portion. (A2)	<ol> <li>The cause of ponding should be identified. Confirm whether this water is coming from reservoir through seepage or may be from toe drain. This stagnant water in toe drain may lead to building of pore pressure in the earthen dam section leading to serious consequences if not attended immediately.</li> <li>Necessary arrangements should be made like removing any obstacles or techno economical nallaregradation etc. so that water will not get stagnant.</li> </ol>			
	MH09MH0170			Relief Wells	Out of 38 Relief wells 22 are not in good condition. Needs periodical Surging & cleaning of relief well. (A5)	<ol> <li>Relief wells should be properly cleaned by surging, jetting or pumping, as per the provision given in IS Code 5050 (1992): Code of practice for design, construction and maintenance of relief well.</li> <li>Cleaning of relief wells should normally restore capacity of the well so that they should be in good working condition and functioning well.</li> </ol>			

		W.W.Bar &	Scouring is observed at spillway	5. The extent and location of such
		ТС	D/s chainage 110-240 m. (A7)	scouring with reference to the various
				components of dam, spillway, outlet etc. should
				be identified with the respect to the levels and
				contour plans and reference marks
				6. Dam owner should identify the cause of
				scouring
				7. Necessary scouring protection work
				should be carried out with prior approval from
				competent technical authority.
				8. If scouring is extensive, scouring
				protection work should be done in consultation
				with Central Design Organisation, Nasik
		Spillway gates	Condition of the steel surface &	1. It may be repaired in consultation with the of
			the surface paint is deteriorated.	Mechanical Organisation.
			(B11)	
		-	Publicar acala about aiona of	1. It may be repaired in consultation with the of
			Rubber sears shows signs of	Machanical Organisation
			weathering need to be replaced or	Weenamear Organisation
		-	repaired. (B12)	
			Rubber seals are not touches	1. It may be repaired in consultation with the of
			uniformly.(B12)	Mechanical Organisation.
		EDA	Scouring is observed at spillway	1. The extent and location of such scouring with
			D/S chainage 140 to 240 m. (A7)	reference to the various components of dam,
				spillway, outlet etc. should be identified with the
				respect to the levels and contour plans and
				reference marks .
				2. Dam owner should identify the cause of
				scouring.
				3. Necessary scouring protection work
				should be carried out with prior approval from
				competent technical authority.
				4. It scouring is extensive, scouring
				protection work should be done in consultation
				with Central Design Organisation, Nasik

				Instruments	Piezometers are not in working	1. Necessary repairs should be carried out with
					condition. (B9)	prior approval from competent technical
						authority
						2. Instrumentation Research Division under
						DSO, Nashik may be contacted for repairs
				Outlet Gates	Service gate :- LBC one stem rod	1. Necessary repairs should be carried out
					is to be replaced. R.B. Outlet gate	with the help of Mechanical Organisation.
					is under repaired. Rubber seal	
					should be replaced. (B5)	
					Emergency Gate :- R.B. & L. B.	1. Necessary repairs should be carried out with
					Outlet gate of HR is under	the help of Mechanical Organisation.
					repaired. (B5)	
					Stem rods of LBC HR for lifting	1 Necessary repairs should be carried out with
					the gate is not straight ( <b>B5</b> )	the help of Mechanical Organisation.
					the gate to not offanging (20)	
1) Ex	ecutive Engineer, PID, B	asmatnagar,	Dist. Hingoli			<u> </u>
,	Nome: VELDARI	11/05/2021	Shri	Farthen Dam	Slushy condition is observed on	1 The cause of slushy condition or
	Year of completion :- 1962	NR	S K Sabbinwar	d/s drainage	D/S side of saddle dam No. 2 & 4	standing pool of water should be identified
	Location : -		SE NIC Nanded	u/ s uraniage	(A2)	Confirm whether this water is coming from
	Longitude :- $76 \square 45' 00''$		0.1		Standing pool of water is	reservoir through seepage or may be from toe
	Latitude :- $19\Box$ 4' 30"				observed in the D/S of dam (A2)	drain. This stagnant water in toe drain may lead
	Height :- 51.23 m					to building of pore pressure in the earthen dam
	Gross capacity :-934.440					section leading to serious consequences if not
	Mm3					attended immediately.
	Design Spillway capacity :-					2. Necessary arrangements should be
	10477 Cmecs					made like removing any obstacles or techno
	Sr. No. in National Register					economical nalla regradation etc. so that water
	Of large Dams -					will not get stagnant.
	MH09HH0171					
					Pitching of toe drains & cross	3. Disturbed drain should be identified
					drains is disturbed in some	chainage.
					patches.(B3)	4. Necessary repair should be carried out.

		Relief wells @ch. 299.90, 303.10,	5. Relief wells should be properly cleaned
	Relief Wells	305.00, 306, 306.50, 307.00, 308.50	by surging, jetting or pumping, as per the
		are not in good condition.(A5)	provision given in IS Code 5050 (1992): Code of
		0 ( )	practice for design, construction and
			maintenance of relief well.
			6. Cleaning of relief wells should normally
			restore capacity of the well so that they should
			be in good working condition and functioning
			well.
	Foundation	Repairing to lighting arrangement	7. Sufficient lighting arrangement should
	Gallery &	of Drainage Gallery is	be provided throughout the length of drainage
	Body Wall	essential.(A8)	gallery to facilitate the maintenance & inspection
			of gallery with battery backup facility.
		Seepage water spring is observed	8. Determine the extent, severity, and
		above 50% capacity on Left flank	cause of the seepage. Measure and photograph
		of NOF @ Ch.40 & 60 m and	any damage caused by the seepage so that its
		level @ 450 200 and 451 500 m	progression can be monitored if necessary.
		(A 1)	9. Always measure the seepage and flow
		(111)	rate with respect to reservoir water level on a
			regular and frequent Basis
			10. The seepage should be checked for
			turbidity which would show the presence of soil
			in the water.
			11. Search for opening on the upstream
			side and plug it if possible.
			12. Reservoir level may need to be lowered
			if saturated areas increase in size at a fixed
			storage level or if flow increases.
			13. Necessary repairs should be carried out.
		Sweating observed on D/s face of	14. Source of sweating should be identified
		dam. (A11)	chainage wise along the length of masonry dam
			and sweating should be quantified with respect
			to reservoir water level.
			15. Necessary repairs should be carried out

		Spillway Gate	Condition of the steel surface & the surface paint is deteriorated. (B11) Rubber seals shows signs of weathering need to be repaired. (B12)	<ul><li>16. It may be repaired in consultation with the of Mechanical Organisation.</li><li>17. It may be repaired in consultation with the of Mechanical Organisation.</li></ul>
	I	End weir	End weir is not accessible. Scouring below end weir is noticed.	18. Access to end weir should be provided. Necessary repairs to stop scouring should be carried out.
			Standing pool of water on d/s of end weir. (A2)	19. The cause of ponding should be identified. Confirm whether this water is coming from reservoir through seepage or may be from toe drain. This stagnant water in toe drain may lead to building of pore pressure in the earthen dam section leading to serious consequences if not attended immediately. 20. Necessary arrangements should be made like removing any obstacles or nalla regradation etc. so that water will not get stagnant.
	I	Instruments	Automatic water level recorder (Floating System) not working smoothly, requires repairing. (B9)	<ul><li>21. Necessary repairs should be carried out</li><li>22. Instrumentation Research Division</li><li>under DSO, Nashikmay be contacted for repairs</li></ul>
		River outlet/River Sluice	-Overall condition of river outlet works / river sluices is not satisfactory.(B5)	23. Necessary repairs should be carried out with the help of Mechanical Organisation.
			Gate 2 & 3 not in working condition. (B5)	24. Necessary repairs should be carried out with the help of Mechanical Organisation.

4	Name :-	11/05/2021	Shri.	Earthen Dam	-Standing pool of water is	1. The cause of slushy condition/ponding
	SIDDHESHWAR	NR	S.K.Sabbinwar	D/s Drainage	observed in the d/s of the dam.	should be identified. Confirm whether this
	Year of completion :-		S.E.,N I.C, Nanded		(A2)	water is coming from reservoir through seepage
	1968				Slushy condition with aquatic	or may be from toe drain. This stagnant water in
	Location : -				weed is observed on D/S of	toe drain may lead to building of pore pressure
	Longitude :- $75\Box$ 05'				spillway at Ch. 164. (A2)	in the earthen dam section leading to serious
	30"					2 Necessary arrangements should be
	Latitude :- 19 0' 20"					made like removing any obstacles or techno
	Height :- 38.10 m					economical nalla regradation etc. so that water
	Gross capacity :-250.85					will not get stagnant.
	Mm3			Spillway gates.	One standby generator set is	3. Alternative power system Generator for
	Design Spillway capacity				required. (A19)	gate operation should be provided and it should
	:-					be always in proper working condition.
	10789 Cmecs				Radial gates needs colouring (B11)	4. It may be repaired in consultation with
	Sr. No. in National					the of Mechanical Organisation.
	Register Of large Dams				Service gate no. 3 stem rod is	5. Necessary repairs should be carried out
	MH09HH0172				bend& required servicing for	with the help of Mechanical Organisation
				Outlet .	smooth functioning (B5)	
					sinootii runeuoiniig. (D3)	
					Emergency gates are required	6. Necessary repairs should be carried out
					servicing. (B5)	with the help of Mechanical Organisation.
				Outlet gates	Lifting gate no. 3 stem rod is	7. Necessary repairs should be carried out
				0	bend. (B5)	with the help of Mechanical Organisation.
					For smooth operation of Outlet	8. Necessary repairs should be carried out
					gates servicing is necessary. (B5)	with the help of Mechanical Organisation.

I) Superintending Engi	ineer, AIC, Aurangabad			
1) Executive Engineer,	MID-1, Aurangabad			
Name :- SHIVAN TAKLI Year of completion Location : - Longitude :- 75□ Latitude :- 20□ Height :- 20□ Gross capacity :- Mm3 Design Spillway 3271 Cumecs Sr. No. in National large Dams 2009:- MH09MH1651	NA on :- 2005 05' 30'' 07' 52'' 40 m 39.36 capacity :- al regi. Of	Upstream Slope Downstream Slope	Dam section is not as per design section <b>(B1)</b> Crest profile is not as per proper elevation. <b>(B1)</b> Signs of bulging or concavity is seen. <b>(B3)</b>	<ul> <li>9. Detailed survey of the dam and dam section should be carried out.</li> <li>10. Dam section (Top width, side slopes, and drains) should be checked. Surveyed section should be superimposed on design section to ascertain whether earthen embankment is under section or not.</li> <li>11. Checking of crest profile is essential to identify the excessive/uneven settlement of the dam.</li> <li>12. Dam owner should figure out the cause of bulging or concavity and supervise all steps necessary to reduce the threat to the dam and to correct the condition.</li> <li>13. Necessary repairs should be carried out.</li> </ul>
		Downstream drainage	At the junction of toe and ground level heavy thick vegetation signs presence of wetness.( <b>A1</b> )	<ul> <li>14. Determine the extent, severity, and cause of the seepage. Measure and photograph any damage caused by the seepage so that its progression can be monitored if necessary.</li> <li>15. Always measure the seepage and flow rate with respect to reservoir water level on a regular and frequent Basis</li> <li>16. The seepage should be checked for turbidity which would show the presence of soil in the water.</li> <li>17. Search for opening on the upstream side and plug it if possible.</li> <li>18. Reservoir level may need to be lowered if saturated areas increase in size at a fixed storage level or if flow increases.</li> <li>19. 6.Necessary repairs should be carried out</li> </ul>

		There is standing pool of water in	20. The cause of ponding should be
		the D/S of dam. $(A2)$	identified. Confirm whether this water is
			coming from reservoir through seepage or may
			be from toe drain. This stagnant water in toe
			drain may lead to building of pore pressure in
			the earthen dam section leading to serious
			consequences if not attended immediately.
			21. Necessary arrangements should be
			made like removing any obstacles or techno
			economical nallaregradation etc. so that water
			will not get stagnant.
	Gallery /	Heavy leakages in R/S & L/S	22. Source of leakage should be identified
	Shaft	gallery. Electrification is damaged.	chainage wise along the length of gallery of the
	Condition	(A8) (A10)	dam and leakages should be quantified with
			respect to reservoir water level.
			23. Investigations for seepage should be
			carried out as per relevant provisions
			mentioned in para5.2.2.2 Investigations for
			seepage of Manual for Rehabilitation of Large
			Dams (Page 47 of 112) published by Central
			Water Commission
			24. Necessary repairs should be carried out
			25. Sufficient lighting arrangement should
			be provided throughout the length of drainage
			gallery to facilitate the maintenance & inspection
			of gallery with battery backup facility
		Leaching material deposition in	26. Side drains should be cleared
		throughout gallery. (A12)	peroidically to drain out the seepage water
			effectively.
			27. Monolith wise Record of quantity of
			leaching material should be maintained.
			3.Seepage water and Leaching material shall be
			tested regularly for chemical composition from
			MERI, Nashik.

		There is considerable leaching from the seepage water & deposition of lime near seepage exist spots. (A12)	<ul> <li>28. Side drains should be cleared peroidically to drain out the seepage water effectively.</li> <li>29. Monolith wise Record of quantity of leaching material should be maintained.</li> <li>3.Seepage water and Leaching material shall be tested regularly for chemical composition from MERI, Nashik.</li> </ul>
		Sweating is seen on spillway. (A11)	<ul> <li>30. Source of sweating should be identified chainage wise along the length of sppilway and sweating should be quantified with respect to reservoir water level.</li> <li>31. Necessary repairs should be carried out .</li> </ul>
	Spillway	Rubber seals shows signs of weathering need to be repaired. (B1	32. It may be repaired in consultation with the of Mechanical Organisation.
	Spillway Gates	Gate no. 4 not working properly. Wire rope broken. (A18)	33. It may be repaired in consultation with the of Mechanical Organisation
	Outlet	Emergency gate is under repair. (B5)	34. Necessary repairs should be carried out.

#### Class-I Dams with Category-3 Deficiency

Sr. No	Name of dam	Year of compl etion	Location Longitude/ Latitude	Height in m	Gross Capacity Mm <sup>3</sup>	Design Spillway Capacity m <sup>3</sup> /sec	Sr.No. in NRLD Register of Large Dams 2009	Gated / Ungated	Date of Inspection	Deficiencies noticed	Total Deficien cies
1	2	3	4	5	6	7	8	9	10	11	12
A) C	hief Engineer &	Chief A	dministrator,	CADA, AU	Irangabad	- d					
1) Su	perintending El		& Administrat	or, CADA	, Aurangaba	ad					
1	Paithan (Jayakwadi)	1976	75° 20'00" 19° 30'00"	41.30	2909.00	18153.0	MH09HH05 97	Gated	20/04/2021 30/11/2021 13.12.2021	3.16, 3.19, 3.9, 3.10, 3.7, 3.13, 3.5, 3.25, 3.1, 3.2, 3.36, 3.20,3.28, 3.18, 3.31, 3.24, 3.30, 3.6, 3.11, 3.22	20
2	Apegaon HL Barrage	2010	75°29'15" 19°26'30"	15.79	7.00	10035.15	MH09MH2 123	Gated	NA 20/12/2021	3.18, 3.20, 3.24, 3.30	04
3	Mangrul H.L.Barrage	2012	75°58'30" 19°18'30"	5.00	25	6186	MH09MH2 127	Gated	31/05/2021 20/12/2021	3.28, 3.24, 3.9, 3.16, 3.19, 3.20, 3.31, 3.27, 3.29, 3.18, 3.30	11
4	Rajatakli H.L.Barrage		76°1'54" 19°16'54"	15.10	25	9386	MH09MH2 128	Gated	28/04/2021 27/12/2021	3.28, 3.24, 3.9, 3.16, 3.19, 3.20, 3.31, 3.21, 3.27, 3.29, 3.18, 3.30	12
5	Jogladevi H.L.Barrage	2012	75°54'39" 19°13'14"	15.715	10	4092	MH09MH2 125	Gated	31/5/2021 20/12/2021	3.28, 3.24, 3.9, 3.16, 3.19, 3.20, 3.31, 3.21, 3.27, 3.29, 3.18, 3.30	05
6	Loni Savangi H.L.Barrage		76°11'30" 19°16'48"	18.602	29.98	10159	MH09MH2 126	Gated	28/04/2021 27/12/2021	3.28, 3.24, 3.9, 3.16, 3.19, 3.20, 3.11, 3.31, 3.21, 3.27, 3.29,3.18, 3.30	13
(2) E	xecutive Engin	eer, NMI	D, Vaijapur								
7	Bordahegaon	1999	75° 59'00" 18° 55'00"	16.70	13.40	511	MH09MH1 491	Gated	09/05/2021 13/12/2021 <b>13.12.2021</b>	3.24, 3.28, 3.7, 3.9, 3.16, 3.19, 3.1, 3.25, 3.17, 3.13, 3.5, 3.2, 3.20, 3.31, 3.6, 3.21, 3.27, 3.29, 3.18, 3.22, 3.30	21
8	Narangi	1998	74⊡43'00" 19⊡ 56'00"	14.00	13.293	1296	MH09MH1 490	Gated	09/05/2021 13/12/2021	3.24, 3.28, 3.7, 3.9, 3.19, 3.1, 3.5, 3.25, 3.17, 3.13, 3.20, 3.11, 3.31, 3.6, 3.21, 3.2, 3.18, 3.16, 3.27, 3.29, 3.30	21

Sr. No	Name of dam	Year of compl etion	Location Longitude/ Latitude	Height in m	Gross Capacity Mm <sup>3</sup>	Design Spillway Capacity m <sup>3</sup> / sec	Sr.No. in NRLD Register of Large Dams 2009	Gated / Ungated	Date of Inspection	Deficiencies noticed	Total Deficien cies
1	2	3	4	5	6	7	8	9	10	11	12
1) Ex	ecutive Engine	er, JID, .	Jalna	•						•	
9	Lower Dudhna	2010	76° 24' 00" 19° 30'00"	27.25	344.80	3600	MH09MH2 089	Gated	28/04/2021 25/11/2021	3.28, 3.24, 3.20, 3.9, 3.1, 3.13, 3.10, 3.25, 3.17, 3.6, 3.2, 3.11, 3.36, 3.33, 3.12, 3.35, 3.18, 3.16, 3.31, 3.21, 3.30, 3.27, 3.26	23
II) Su	uperintending E	ngineer,	CADA, Beed								
1) Ex	cecutive Engine	er, MID,	Parali (V)				·		<b>I</b>		
10	Majalgaon	1986	73° 26' 30" 16° 16' 00"	31.05	4540	15500	MH09HH11 74	Gated	29/04/2021 30/11/2021	3.24, 3.9, 3.20, 3.25, 3.36, 3.3, 3.13, 3.2, 3.28, 3.31, 3.18, 3.6,3.30, 3.27, 3.1, 3.11, 3.26	17
III) S	uperintending I	Engineer	, CADA, Latu	r							
1) Ex	cecutive Engine	er, LID-1	, Latur						T		1
11	Lower Terna	1989	76° 25' 45" 18° 01' 00"	26.10	121.188	9120	MH09MH1 228	Gated	09/04/2021 11/01/2022 <b>15.12.2021</b>	3.24, 3.9, 3.10, 3.13, 3.7, 3.3, 3.20, 3.31, 3.28, 3.18, 3.23, 3.22, 3.30, 3.6	14
12	Manjara	1980	76° 15' 00" 18° 55' 00"	30	22.40	8370	MH09MH1 585	Gated	23.05.2021 22.12.2021	3.24, 3.7, 3.9, 3.13, 3.10, 3.5, 3.3, 3.36, 3.20, 3.11, 3.31, 3.21, 3.16, 3.18, 3.28, 3.32, 3.23, 3.22, 3.30, 3.27, 3.6	21
13	Masalga	1994	76° 43'30" 18° 42'52"	12.39	14.67	3009	MH09HH14 08	Gated	15/04/2021 11/01/2022 <b>15.12.2021</b>	3.24, 3.2, 3.20, 3.9, 3.25, 3.6, 3.7,3.13, 3.16, 3.31, 3.28, 3.18, 3.16, 3.22, 3.33, 3.30, 3.27, 3.1, 3.11	19
14	Gunjarga Latur Type Barrage	2016	76°49'10" 18°0300"	19.95	1.368	4713.14		Gated	10/04/2021 11/01/2022	3.16, 3.20, 3.24, 3.30	04
15	Rajegaon Latur Type Barrage	2015		23.25	0.587	5974.48		Gated	09/04/2021 11/01/2022	3.16, 3.20, 3.24, 3.30	04
16	BINDGIHAL Latur type Barrage	2011	76°2'30" 18°17'28"	17.15	1.35	7354		Gated	30/11/2021	3.20, 3.24, 3.30	03

Sr. No	Name of dam	Year of compl	Location Longitude/ Latitude	Height in m	Gross Capacity Mm <sup>3</sup>	Design Spillway Capacity	Sr.No. in NRLD Register of	Gated / Ungated	Date of Inspection	Deficiencies noticed	Total Deficien cies
		etion				m <sup>3</sup> / sec	Large Dams 2009				
1	2	3	4	5	6	7	8	9	10	11	12
17	Dhanegaon High Level Barrage	2012	76°54'30" 18°11'45"	18.84	11.31	9997		Gated	30/11/2021	3.20, 3.24,3.30	03
18	Hosur Barrage	2016	76°56'48" 18°08'19"	16.51	2.25	7903.03		Gated	30/11/2021	3.3,3.6,3.7,3.9,3.10,3.13,3.18, 320,3.22,3.23,3.24,3.28,3.30, 3.31	14
19	Karsa Pohregaon Barrage.	2008	76°27'25'' 18°32'44''	22.40	3.412	5746		Gated	29/11/2021	3.16, 3.20, 3.24,3.30	04
20	Khulgapur HL Barrage	2009	77°40'30" 19°28'35"	14.65	9.72	6547		Gated	30/11/2021	3.20, 3.24, 3.30	03
21	SAI H.L. Barrage	2012- 13	76°34'00" 18°27'00"	22.20	3.47	5986.74		Gated	29/11/2021	3.16,3.20, 3.30	03
22	Shivani H.L. Barrage	2015	76 41'12" 18 21'45"	27.15	9.81	6583.49		Gated	30/11/2021	3.20, 3.24, 3.30	03
23	Takalgaon Deola Barrage	2014		20.50	1.91	5170		Gated	12/01/2022	3.16, 3.20, 3.30	03
B) C	hief Engineer,	WR, Aura	angabad								
I) Su	perintending E	ngineer,	Aurangabad	rrigation	Circle, Aura	ngabad					
1) Ex	kecutive Engine	er, MID-	I, Aurangaba			0074			0.4/05/0004		
24	Shivna I akali	2005	75° 05' 30" 20° 07' 52"	20.40	39.36	3271	MH09MH1 651	Gated	24/05/2021 NR	3.1, 3.5, 3.6, 3.16, 3.2, 3.11, 3.26, 3.9, 3.25, 3.17, 3.13, 3.33, 3.18, 3.36, 3.19, 3.31, 3.28, 3.20, 3.27, 3.22, 3.30, 3.24, 3.29, 3.32, 3.7	25
II) Su	uperintending E	ngineer,	Nanded Irrig	ation Circ	le, Nanded						
1) Ex	kecutive Engine	er, NID(S	South), Nande	ed				1		r	
25	Lower Manar	1964	76° 45' 00" 19° 4' 30"	27	139	8778	MH09MH0 170	Gated	24/5/2021 NR <b>15/12/2021</b>	3.1, 3.19, 3.9, 3.20, 3.31, 3.24, 3.27, 3.30, 3.22, 3.28	10

Sr.	Name of	Year	Location	Height	Gross	Design Spillwov	Sr.No. in	Gated /	Date of	Deficiencies noticed	Total
NO	aam	compl	Longitude/	in m	Mm <sup>3</sup>	Capacity	Register of	Ungated	inspection		cies
		etion				m <sup>3</sup> /sec	Large				
							Dams				
4	2	2	4	F	6	7	2009	0	10	44	10
1		<b>3</b>	4	<b>3</b>	107.09	<i>[</i>		<b>9</b> Cotod	10		12
20	Opper manar	2009	72° 02' 00"	30.90	107.98	5774		Galeo	24/5/2021	3.24, 3.9, 3.30, 3.15, 3.33, 3.13, 3.10,	19
			18° 47' 00″				00			3 18 3 16 3 30 3 27 3 28	
2) Ex	cecutive Engine	er, NID(I	North), Nande	d	1		I				
Ź7	Balegaon HL	2015	77° 34' 33"	29.34	42.50	8795	MH09MH2	Gated	14/5/2021	3.24, 3.20, 3.31, 3.28, 3.18, 3.19, 3.16,	09
	Barrage		18°57' 14"				117		NR	3.30, 3.27	
28	Vishnupuri	1990	76° 41' 00"	31.00	83.55	8483	MH09LH12	Gated	27/05/2021	3.24, 3.28, 3.18, 3.19, 3.20, 3.16, 3.22,	09
			19° 17' 00"				54		NR	3.30, 3.27	
29	Digras H.L.	2010	76° 29' 30"	11.00	63.85	14474	MH09HH21	Gated	125/2021	3.24, 3.18, 3.20, 3.16, 3.6, 3.30	06
	Barrage		19° 05'20"				16		NR		
30	Babhali H.L.	2012	77° 46' 46"	29.76	3.47	5986.74	MH09MH2	Gated	25/05/2021	3.24, 3.18, 3.20, 3.31, 3.28, 3.19, 3.30,	07
	Barrage		18°51'13"				118		NR	3.6, 3.27	
31	Amdura H.L.	2011		25.395	23.71	20349.15	MH09HH21	Gated	27/05/2021	3.24, 3.20, 3.11, 3.21, 3.31, 3.28, 3.18,	11
	Barrage						19		NR	3.16, 3.17, 3.30, 3.27	
3) Ex	cecutive Engine	er, UPPI	D-1, Nanded				<b>-</b>				
32	Isapur (UPP)	1982	77° 27' 00"	58.00	1254	9400	MH09HH09	Gated	28/05/2021	3.9,3.25,3.13,3.17,3.27,3.1,	16
			19° 43'00"				47		NR	3.36,3.12,3.16,3.19,3.6,3.31,3.20,3.1	
2) E	agutiya Engina		Paamatnagar						14/12/2021	8,3.33,3.30	
3) ⊑2 33	Veldari	1062	Dasmamayar	51 23	034 440	10477		Cated	11/5/2021	3 24 3 26 3 25 3 0 3 10 3 13 3 5	21
55	Teluan	1902	70° 45 00	51.25	934.440	10477	71	Galeu	ND	3.1 $3.26$ $3.12$ $3.10$ $3.20$ $3.11$ $3.11$ $3.21$	21
			19° 4 30				/ 1			3 28 3 27 3 18 3 34 3 22 3 6 3 30	
34	Siddheshwar	1968	75° 05' 30"	38 10	250.85	10789	MH09HH01	Gated	11/5/2021	3 33 3 9 3 7 3 10 3 5 3 2 3 1	21
0.	oldalloollina		10° 0° 00° 00°	00.10	200.00	10100	72	outou	28/10/2020	3.19, 3.11, 3.26, 3.31, 3.28, 3.27.	
			10 0 20							3.18, 3.16, 3.32, 3.20, 3.23, 3.24,	
										3.30, 3.6	
4) Ex	cecutive Engine	er, MID,	Parbhani								
35	Mudgal HL	2012		19	11.87	4293.25	MH09MH2	Gated	19/05/2021	3.24, 3.21, 3.20, 3.31, 3.27, 3.18,	10
	Barrage						121	-	NR	3.16, 3.19, 3.30, 3.1	
36	Dhalegaon	2012		16.5	14.87	8774	MH09MH2	Gated	19/05/2021	3.24, 3.11, 3.21, 3.20, 3.31, 3.27,	10
	HL Barrage						129		NR	3.18, 3.30, 3.27, 3.1	

Sr. No	Name of dam	Year of compl etion	Location Longitude/ Latitude	Height in m	Gross Capacity Mm <sup>3</sup>	Design Spillway Capacity m <sup>3</sup> / sec	Sr.No. in NRLD Register of Large Dams 2009	Gated / Ungated	Date of Inspection	Deficiencies noticed	Total Deficien cies
1	2	3	4	5	6	7	8	9	10	11	12
III) S	uperintending I	Engineer	, Beed Irrigat	ion Projec	ct Circle, Be	ed					
1) Ex	xecutive Engine	er, BID,	Beed								
37	Upper Kundalika	2016	76°01'00'' 18°56'00''	24.28	18.77	3353.52	Proposed to be included in NRLD	Gated	29/04/2021 20/11/2021	3.1, 3.9, 3.36, 3.25, 3.18, 3.20, 3.31, 3.28, 3.27, 3.6, 3.30, 3.24	12

# Class-II Dams with Category-1 Deficiency

No Inspection O		_	
	fficer Component of	Deficiencies noticed	
	Dam		
1 2 3	4 5	6	7
	NIL		

			Class-II Dai	ns with Categ	gory-2 Deficiency	
SR NO	DAM FEATURES	DATE OF INSPECTION	INSPECTIN G OFFICER	MAIN COMPONE NT OF DAM	SIGNIFICANT DEFICIENCIES NOTICED.	REMEDIAL MEASURES SUGGESTED
1	2	3	4	5	6	7
A) C	hief Engineer & Chief Administra	tor CADA, Aurar	ngabad			
I) Su	perintending Engineer & Adminis	trator CADA, Au	rangabad			
1) Ez	xecutive Engineer, Jalna Irrigation	Division, Jalna				
1	Name : <b>KALYAN PIR</b> Date of completion :1986 Location : Longitude : $76\square$ 9' 42" Latitude : $19\square$ 49" 51" Gross Capacity :15.36 Mm3 Height : 16.60 m. Design spillway Capacity 1315 m3/sec.	27/04/2021 28/10/2021	Smt S.B.Korke EE, JID, Jalna	Earthen embankment	Near w w portion complete pitching is disturbed. (B3).	1. Disturbed pitching should be identified chainage wise along the length of dam and should be repaired properly in accordance with provision given in IS 14954 (2001): Distress and remedial measures in earth and rock fill dams – Guidelines, with prior approval from competent technical authority.
	Sr No in National Register of Large Dams 2009 : MH09MH1138				Longitudinal cracks are observed near sluice gate upto 20m length R/f.(B4)	<ul> <li>1.Longitudinal cracks should be identified chainage wise along the length of the dam, this should include its location, length, depth, width, alignment, and other pertinent physical features.</li> <li>2.Crack should be monitored with reference to reservoir water level</li> <li>Dam owner should decide on the cause of cracking and supervise steps necessary to reduce the danger to the dam and to correct the condition</li> </ul>

Table 3.14Class-II Dams with Category-2 Deficiency

SR NO	DAM FEATURES	DATE OF INSPECTION	INSPECTIN G OFFICER	MAIN COMPONE NT OF DAM	SIGNIFICANT DEFICIENCIES NOTICED.	REMEDIAL MEASURES SUGGESTED
					Relief wells are not functioning properly. (A5)	<ul> <li>3.Cracks may be sealed with suitable material at the crest's surface to prevent infiltration by surface water with prior approval from competent technical authority in accordance with provision given in IS 14954 (2001): Distress and remedial measures in earth and rock fill dams - Guidelines</li> <li>4.Continue to monitor routinely the embankment crest for evidence of further cracking.</li> <li>1.Relief wells should be properly cleaned by surging, jetting or pumping, as per the provision given in IS Code 5050 (1992): Code of practice for design, construction and maintenance of relief well.</li> <li>2.Cleaning of relief wells should normally restore capacity of the well so that they should be in good working condition and functioning well.</li> </ul>
				W.W. Bar. & T/C.	Minor leakage through waste weir bar masonry. Masonry is not in good condition. (B7	<ol> <li>Source of leakage should be identified chainage wise along the length of waste weir bar and leakages should be quantified with respect to reservoir water level.</li> <li>Investigations for seepage should be carried out as per relevant provisions mentioned inpara5.2.2.2 Investigations for seepage of Manual for Rehabilitation of Large Dams (Page 47 of 112) published by Central Water Commission</li> </ol>

SR NO	DAM FEATURES	DATE OF INSPECTION	INSPECTIN G OFFICER	MAIN COMPONE NT OF DAM	SIGNIFICANT DEFICIENCIES NOTICED.	REMEDIAL MEASURES SUGGESTED
2	Name : <b>DHAMNA</b> Date of completion :1974-75 Location : Longitude : 76 ° 50' 00" Latitude : 20 ° 27'00" Gross Capacity : 10.72 Mm3 Height : 13.45 m. Design spillway Capacity - 1388 m3/sec. Sr No in National Register of Large Dams 2009 : <b>MH09LH0450</b>	27/05/2021 02/11/2021	Ms. S.B.Korke Ex.Engr., JID, Jalna	Earthen Embankment	Relief wells not functioning properly. (A5)	<ul><li>1.Relief wells should be properly cleaned by surging, jetting or pumping, as per the provision given in IS Code 5050 (1992): Code of practice for design, construction and maintenance of relief well.</li><li>2.Cleaning of relief wells should normally restore capacity of the well so that they should be in good working condition and functioning well.</li></ul>
					Top of dam is settled to extent of 0.3 m below TBL. (B1)	<ol> <li>Detailed survey of the dam and dam section should be carried out.</li> <li>Dam section (Top width, side slopes, and drains) should be checked. Surveyed section should be superimposed on design section to ascertain whether earthen embankment is under section or not.</li> <li>Checking of crest profile is essential to identify the excessive/uneven settlement of the dam.</li> <li>Dam owner should figure out the cause of low area and supervise all steps necessary to reduce the threat to the dam and to correct the condition.</li> <li>A uniform crest elevation may be reestablished over the crest length by placing proper filler material in the low area in accordance with relevant IS codes with prior approval from competent</li> </ol>
SR NO	DAM FEATURES	DATE OF INSPECTION	INSPECTIN G OFFICER	MAIN COMPONE NT OF DAM	SIGNIFICANT DEFICIENCIES NOTICED.	REMEDIAL MEASURES SUGGESTED
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						<ul><li>technical authority.</li><li>6) Necessary repairs should be carried out.</li></ul>
					Pitching is disturbed to 5 percent of total length of dam. (B3)	<ol> <li>Disturbed pitching should be identified chainage wise along the length of dam and should be repaired properly in accordance with provision given in IS 14954 (2001): Distress and remedial measures in earth and rock fill dams – Guidelines, with prior approval from competent technical authority.</li> <li>Necessary repairs should be carried out.</li> </ol>
						1.Source of leakage should be identified chainage wise along the length of waste weir bar and leakages should be quantified with respect to reservoir water level.
				W.W Bar &T.C	Leakage to the tune of 1 cusecs observed. Pointing disturbed.(B7)	2.Investigations for seepage should be carried out as per relevant provisions mentioned inpara5.2.2.2 Investigations for seepage of Manual for Rehabilitation of Large Dams (Page 47 of 112) published by Central Water Commission 3.W.W. Bar may be repaired in accordance with approved drawing and relevant IS codes.

SR NO	DAM FEATURES	DATE OF INSPECTION	INSPECTIN G OFFICER	MAIN COMPONE NT OF DAM	SIGNIFICANT DEFICIENCIES NOTICED.	REMEDIAL MEASURES SUGGESTED

SR NO	DAM FEATURES	DATE OF INSPECTION	INSPECTIN G OFFICER	MAIN COMPONE NT OF DAM	SIGNIFICANT DEFICIENCIES NOTICED.	REMEDIAL MEASURES SUGGESTED

SR N O	DAM FEATURES	DATE OF INSPECTIO N	INSPECTIN G OFFICER	MAIN COMPONE NT OF DAM	SIGNIFICANT DEFICIENCIES NOTICED.	REMEDIAL MEASURES SUGGESTED
1	2	3	4	5	6	7
3	Name : <b>KALYAN GIRIJA</b> Date of completion :1972 Location : Longitude : 76 ° 10' 40" Latitude : 19 ° 50' 00" Gross Capacity : 10.16 Mm3 Height : 22.07 m. Design spillway Capacity - 1310 m3/sec. Sr No in National Register of Large Dams 2009 : MH09MH0312	27/04/2021 27/04/2021	Smt S.B.Korke Ex.Engr., JID, Jalna	Larthern Dam	Undulations are observed. Local depression noticed as well as settlement of embankment observed at some place.(B3) Section is not as per design. (B1)	<ol> <li>Detailed survey of the dam and dam section should be carried out.</li> <li>Dam section (Top width, side slopes, and drains) should be checked. Surveyed section should be superimposed on design section to ascertain whether earthen embankment is under section or not.</li> <li>Checking of crest profile is essential to identify the excessive/uneven settlement of the dam.</li> <li>Dam owner should figure out the cause of low area and supervise all steps necessary to reduce the threat to the dam and to correct the condition.</li> <li>A uniform crest elevation may be reestablished over the crest length by placing proper filler material in the low area in accordance with relevant IS codes with prior approval from competent technical authority.</li> </ol>

SR N O	DAM FEATURES	DATE OF INSPECTIO N	INSPECTIN G OFFICER	MAIN COMPONE NT OF DAM	SIGNIFICANT DEFICIENCIES NOTICED.	REMEDIAL MEASURES SUGGESTED
1	2	3	4	5	6	7
				W.W Bar &T.C	Leakages are observed through masonry and coping is damaged.(B7)	1.Source of leakage should be identified chainage wise along the length of waste weir bar and leakages should be quantified with respect to reservoir water level.
						2.Investigations for seepage should be carried out as per relevant provisions mentioned inpara5.2.2.2 Investigations for seepage of Manual for Rehabilitation of Large Dams (Page 47 of 112) published by Central Water Commission.
						3. Location, type, and extent of the damages of the End weir should be identified and photographed.
						4.W.W. Bar may be repaired in accordance with approved drawing and relevant IS codes.

SR N O	DAM FEATURES	DATE OF INSPECTIO N	INSPECTIN G OFFICER	MAIN COMPONE NT OF DAM	SIGNIFICANT DEFICIENCIES NOTICED.	REMEDIAL MEASURES SUGGESTED
1	2	3	4	5	6	7
4	Name : <b>JUI</b> Date of completion :1962 Location : Longitude : 75 ° 46' 00" Latitude : 20 ° 20' 30" Gross Capacity : 6.03 Mm3 Height : 14.47 m. Design spillway Capacity - 1613 m3/sec. Sr No in National Register of Large Dams 2009 : MH09MH0082	27/05/2021 29/11/2021 28/10/2021	Smt. S.B.Korke Ex.Engr., JID, Jalna Shri. P.S.Patare Ex.Engr.,DS O-3 Nashik Shri. C.T.Mondhe SDE, DSO- 3 Nashik Smt. P.P.Bhoye JE, DSO-3, Nashik	Earthen Embankment	Top of dam is settled down to the extent of 0.30 m from TBL (B1)	<ul> <li>1.Detailed survey of the dam and dam section should be carried out.</li> <li>2.Dam section (Top width, side slopes, and drains) should be checked. Surveyed section should be superimposed on design section to ascertain whether earthen embankment is under section or not.</li> <li>3.Checking of crest profile is essential to identify the excessive/uneven settlement of the dam.</li> <li>4.Dam owner should figure out the cause of low area and supervise all steps necessary to reduce the threat to the dam and to correct the condition.</li> <li>5.A uniform crest elevation may be reestablished over the crest length by placing proper filler material in the low area in accordance with relevant IS codes with prior approval from competent technical authority.</li> <li>6.Necessary repairs should be carried out.</li> </ul>
DSC	-ADHSR-2021-22/ MARATHWA	DA			95	

1       2       3       4       5       6       7         Image: State of the state of th
Image: second
masonry @ 1 cusecs of w.w. bar. (B7) masonry @ 1 cusecs of w.w. bar. (B7) wasonry @ 1 cusecs of w.w. bar. (B7) published by Central Water Commission 3. Location, type, and extent of the damages of the guide wall should be identified and photographed. 4.W.W. Bar may be repaired in accordance with approved drawing an

SR N O	DAM FEATURES	DATE OF INSPECTIO N	INSPECTIN G OFFICER	MAIN COMPONE NT OF DAM	SIGNIFICANT DEFICIENCIES NOTICED.	REMEDIAL MEASURES SUGGESTED
1	2	3	4	5	6	7
II) S	uperintending Engineer & Adminis	trator CADA, La	utur			
1) E:	xecutive Engineer, Latur Irrigation I	Division - 2, Latu	r			
6	Name :- ANANDWADI (ST) Date of completion :- 2002 Longitude :- 76□ 49' 15" Latitude :- 18□ 22' 30" Height :- 18.80 m Gross capacity :- 2.026 Mm <sup>3</sup> Design Spillway capacity :- 256.84 m3/sec. Sr. No. in National register Of large Dams 2009 :- MH09MH1607	16/05/2021 21/11/2021	Shri. R.S.Jagtap EE,LID-2, Latur	W.W Bar &T.C	Retrogression/scouring in tail channel noticed. (A7)	<ol> <li>The extent and location of such scouringwith reference to the various components of dam, spillway, outlet, power house etc. should be identified with the respect to the levels and contour plans and reference marks in tail channel.</li> <li>Dam owner should identify the cause of scouring.</li> <li>Necessary scouring protection work should be carried out with prior approval from competent technical authority.</li> <li>If scouring is extensive,scouring protection work should be done in consultation with Central Design Organisation, Nasik.</li> </ol>

7	Name :- HALAD WADHONA	09/05/2021	Shri. R.S.Jagtap	Outlet	Outlet well is constructed but not in	1.Necessity of repairing the outlet well
	(ST)	23/10/2021	EE,LID-2,		use, closed completely. (A6)	should be checked.
	Date of completion :- 2001		Latur			
	Longitude :- 77°13'55"					2. If found necessary, outlet well should
	Latitude :- 18°36'35"					be properly surged and cleaned to restore
	Height :- 19.15m					original working capacity of the well, with
	Gross capacity :- 3.693 Mm <sup>3</sup>					prior approval from competent technical
	Design Spillway capacity :-					authority.
	442.28 m3/sec.					
	Sr. No. in National regi. Of large					
	Dams 2009 :-					1.Balance work may be completed in
	MH09LH1510			W.W.Bar&	32 m long and 0.90 m in height of	accordance with approved drawings and
				TC	w.w. bar not constructed.(B7)	relevant IS codes with prior approval
						from competent technical authority.
						1.Location, type, and extent of the
						damages of the End weir should be
					U/s and $d/s$ face of spillway bar	identified and photographed.
					needs pointing. (B7)	2 Spilly has may be repaired in
						2. Spillway bat may be repared in
						relevant IS codes with prior approval
						from competent technical authority
						fion competent technical autionty.
						1.Location, type, and extent of the
						damages of the guide wall should be
					Guide wall is broken in 4 patches and	identified and photographed.
					protection bund in 10 m length (A16)	
						2.Necessary repairs should be carried out
						in accordance with approved drawing with
						prior approval from competent technical
						authority.

SR N O	DAM FEATURES	DATE OF INSPECTIO N	INSPECTIN G OFFICER	MAIN COMPONE NT OF DAM	SIGNIFICANT DEFICIENCIES NOTICED.	REMEDIAL MEASURES SUGGESTED
1	2	3	4	5	6	7
1 8	Z         Name :- DONGARGAON (ST)         Date of completion :- 2008         Longitude :- 77°12'00"         Latitude :- 18°34'00"         Height :- 18.96m         Gross capacity :- 3.627Mm <sup>3</sup> Design Spillway capacity :-         429.767 m3/sec.         Sr. No. in National regi. Of large         Dams 2009 :-         MH09MH1093	<u>99/05/2021</u> 23/1/2021	Shri. R,S,Jagtap, EE,LID-2, Latur	W.W.Bar & TC	b Drop wall 1,7,2 has badly damaged. (A16) Leakage through foundation. Approx 40lpm (B7)	<ul> <li>1.Location, type, and extent of the damages of the Drop wall should be identified and photographed.</li> <li>2.Necessary repairs should be carried out in accordance with approved drawing with prior approval from competent technical authority.</li> <li>1.Source of leakage should be identified chainage wise along the length of waste weir bar and leakages should be quantified with respect to reservoir water level.</li> <li>2.Investigations for seepage should be carried out as per relevant provisions mentioned inpara5.2.2.2 Investigations for seepage of Manual for Rehabilitation of Large Dams (Page 47 of 112) published by Central Water Commission.</li> <li>3.W.W. Bar may be repaired in accordance with approved drawing and relevant IS codes.</li> </ul>

SR N O	DAM FEATURES	DATE OF INSPECTIO N	INSPECTIN G OFFICER	MAIN COMPONE NT OF DAM	SIGNIFICANT DEFICIENCIES NOTICED.	REMEDIAL MEASURES SUGGESTED
1	2	3	4	5	6	7
9	Name :- ANDHORI (ST) Date of completion :- 2006 Longitude :- 76°47'00" Latitude :- 18°46'00" Height :- 17.00m Gross capacity :- 2.1624 Mm <sup>3</sup> Design Spillway capacity :- 192.98 m3/sec. Sr. No. in National regi. Of large Dams 2009 :- MH09MH2267	17/05/2021 15/11/2021	Shri. R.S.Jagtap EE,LID-2, Latur	W.W.Bar& TC	Nearly parallel side of the guide wall trenches are found out of 2 to 2.5m in depth and 2 to 3.5 m in width throughout the guide wall. (A16) Guide bund pitching of both side damaged. (B3)	<ol> <li>The extent and location of such trenches with reference to the various components of dam, spillway, outlet, power house etc. should be identified with the respect to the levels and contour plans and reference marks.</li> <li>Dam owner should identify the cause of formation of trenches</li> <li>Necessary repair work should be carried out with prior approval from competent technical authority.</li> <li>If formation of trenches is extensive, repair work should be done in consultation with Central Design Organisation, Nasik .</li> <li>Disturbed pitching should be identified chainage wise along the length of Guide bund and should be repaired properly in accordance with provision given in IS 14954 (2001): Distrome and remedial measures in</li> </ol>
						earth and rock fill dams – Guidelines, with prior approval from competent technical authority.

	Retrogression / souring at side of guide wall is noticed. (A7)	<ol> <li>The extent and location of such scouringwith reference to the various components of dam, spillway, outlet, power house etc. should be identified with the respect to the levels and contour plans and reference marks.</li> <li>Dam owner should identify the cause of scouring.</li> <li>Necessaryscouringprotection work should be carried out with prior approval from competent technical authority.</li> <li>If scouring is extensive, scouring</li> </ol>
		4.If scouring is extensive, scouring protection work should be done in consultation with Central Design Organisation, Nasik.

SR N O	DAM FEATURES	DATE OF INSPECTIO N	INSPECTIN G OFFICER	MAIN COMPONE NT OF DAM	SIGNIFICANT DEFICIENCIES NOTICED.	REMEDIAL MEASURES SUGGESTED
1	2	3	4	5	6	7
10	Name :- TIRU Date of completion :- 1976 Longitude :- 77°04'06" Latitude :- 18°25'22" Height :- 21.00m Gross capacity :- 23.32Mm <sup>3</sup> Design Spillway capacity :- 1994 m3/sec. Sr. No. in National regi. Of large Dams 2009 :- MH09MH0595	13/05/2021 25/11/2021 24/11/2021	ShriR.S.Jagtap EE,LID-2, Latur Shri. P.S.Patare Ex.Engr., DSO -3 Nashik Shri. C.T.Mondhe SDE, DSO- 3 Nashik	Earthen Embankment	Longitudinal cracks observed length 600 m, width 10 to 12 cm and depth 30 to 70 cm. (B4)	<ol> <li>Longitudinal cracks should be identified chainage wise along the length of the dam, this should include its location, length, depth, width, alignment, and other pertinent physical features.</li> <li>Crack should be monitored with reference to reservoir water level</li> <li>Dam owner should decide on the cause of cracking and supervise steps necessary to reduce the danger to the dam and to correct the condition Cracks may be sealed with suitable material at the crest's surface to prevent infiltration by surface water with prior approval from competent technical authority in accordance with provision given in IS 14954 (2001): Distress and remedial measures in earth and rock fill dams – Guidelines.</li> <li>Continue to monitor routinely the embankment crest for evidence of further cracking.</li> </ol>

			Settlement of pitching at RD 700 to 900 m.(B3) Section is not as per design. Section concavity at RD 700 to 900 m on u/s is noticed.(B3)	<ul> <li>1.Disturbed pitching should be identified chainage wise along the length of dam and should be repaired properly in accordance with provision given in IS 14954 (2001): Distress and remedial measures in earth and rock fill dams – Guidelines, with prior approval from competent technical authority.</li> <li>1.Detailed survey of the dam and dam section should be carried out.</li> <li>2.Dam section (Top width, side slopes, and drains) should be checked. Surveyed section should be superimposed on design section to ascertain whether earthen embankment is under section or not.</li> <li>3.Dam owner should figure out the cause of low area and supervise all steps necessary to reduce the threat to the dam and to correct the condition.</li> <li>4. Necessary repairs should be carried out.</li> </ul>
		General	There are 70 nos of godbole gates,	1.Necessary action should be taken in
			and working properly. (B5)	Department.

SR N O	DAM FEATURES	DATE OF INSPECTIO N	INSPECTIN G OFFICER	MAIN COMPONE NT OF DAM	SIGNIFICANT DEFICIENCIES NOTICED.	REMEDIAL MEASURES SUGGESTED
1	2	3	4	5	6	7
1) Ex	ecutive Engineer, Osmanabad Irrig	ation Division -	1, Osmanabad			
11	Name : <b>TINTRAJ</b> Date of completion :1985 Location : Longitude : 75 31' 00" Latitude : 18 36' 00" Gross Capacity: 1.393 Mm3 Height : 15.55 m. Design spillway Capacity	22/04/2021 07/11/2021	Shri. S.S.Awate, Ex.Engr., OID-1, Osmanabad	Outlet	Outlet gate does not function properly, unsual noise is observed.(B5)	1.Necessary repairs should be carried out with the help of Mechanical Organisation.
	429.76m3/sec. Sr No in National Register of Large Dams 2009 : MH09MH093			W.W.Bar & TC	W.W.Bar is not in good condition. Needs urgent repairs. (B7)) Coping over the bar is not in good condition.(B7) Pointing required at u/s and d/s side of w.w. bar.(B8)	1.Location, type, and extent of the damages of the spillway bar should be identified and photographed Necessary repairs should be carried out in accordance with approved drawing with prior approval from competent technical authority.

	Sco	couring in tail channel. (A7)	<ul> <li>1. The extent and location of such scouring with reference to the various components of dam, spillway, outlet, power house etc. should be identified with the respect to the levels and contour plans and reference marks in tail channel</li> <li>2. Dam owner should identify the cause of retrogression/scouring</li> <li>3. Necessary scouring protection work should be carried out with prior approval from competent technical authority.</li> <li>4. If scouring is extensive, retrogression / scouring protection work should be done in consultation with Central Design Organization, Nasik.</li> <li>1. Access road should be provided, repaired and maintained properly.</li> </ul>
	All	ll weather access road is not rovided/ maintained. (B6)	

SR NO	DAM FEATURES	DATE OF INSPECTION	INSPECTING OFFICER	MAIN COMPONE NT OF DAM	SIGNIFICANT DEFICIENCIES NOTICED.	REMEDIAL MEASURES SUGGESTED
1	2	3	4	5	6	7
12	Name : <b>KHANDESHWAR</b> Date of completion :1978 Location : Longitude :75□□□ '00" Latitude : 18□ 30' 00" Gross Capacity: 10.80 Mm3 Height : 17.14 m. Design spillway Capacity 1307 m3/sec. Sr No in National Register of Large Dams 2009 : MH09MH0730	10/05/2021 25/11/2021	Shri. S.S.Awate, Ex.Engr., OID- 1, Osmanabad	E/dam	Settlement between ch.500 to 640m observed (B3)	<ol> <li>Detailed survey of the dam and dam section should be carried out.</li> <li>Dam section (Top width, side slopes, and drains) should be checked. Surveyed section should be superimposed on design section to ascertain whether there is settlement of earthen embankment or not.</li> <li>Checking of crest profile is essential to identify the excessive/uneven settlement of the dam.</li> <li>Dam owner should figure out the cause of low area and supervise all steps necessary to reduce the threat to the dam and to correct the condition.</li> <li>A uniform crest elevation may be reestablished over the crest length by placing proper filler material in the low area in accordance with relevant IS codes with prior approval from competent technical authority.</li> <li>Necessary repairs should be carried out.</li> </ol>

640m noticed. (B4) identifie	° 1 1 · · · 1 .1
	tied chainage wise along the
length	of the dam, this should include
its loc	cation, length, depth, width,
alignme	nent, and other pertinent
physical	al features.
2.Crack	k should be monitored with
reference	nce to reservoir water level.
3.Dam	n owner should decide on the
cause o	of cracking and supervise steps
	sarv to reduce the danger to the
dam_at	and to correct the condition
Cracks	s may be sealed with suitable
materia	al at the crest's surface to
nrevent	at infiltration by surface water
with pr	prior approval from competent
technic	cal authority in accordance with
	ion given in IS 14954 (2001):
Distress	ess and remedial measures in
earth ar	and rock fill dams – Guidelines
	tipue to monitor routinely the
embank	akment crest for evidence of
further	r cracking
	i cracking.

			Rock toe is removed from ch 500 to 640	1.Detailed survey of the dam and dam
			m (B3)	section should be carried out.
				2.Dam section (Top width, side
				slopes, Rock toe and drains) should be
				checked. Surveyed section should be
				superimposed on design section to
				ascertain whether earthen
				embankment is under section or not
				or if any element of earthem dam is
				missing or not.
				3.Decision regarding construction of
				Rock toe within chainage from 500 to
				640 m should taken by competent
				technical authority considering the
				ground levels and approved section
				of the dam.
				1 Logation type and systems of the
				damages of the spillway bar should be
				identified and photographed.
			W.W. bar is not in good condition (B7)	1 0 1
		W.W. Bar &	w.w. bai is not in good condition. (D7)	2.Necessary repairs should be carried out
		TC		in accordance with approved drawing with
				prior approval from competent technical
				authority.

SR N O	DAM FEATURES	DATE OF INSPECTIO N	INSPECTIN G OFFICER	MAIN COMPONE NT OF DAM	SIGNIFICANT DEFICIENCIES NOTICED.	REMEDIAL MEASURES SUGGESTED			
1	2	3	4	5	6	7			
1) Ex	) Executive Engineer, Osmanabad Irrigation Division - 1, Osmanabad								
13	Name : <b>CHANDANI</b> Date of completion :1966 Location : Longitude : 75□ 34' 00" Latitude : 18□ 16' 00" Gross Capacity: 23.78 Mm3 Height : 17.37 m. Design spillway Capacity 2996m3/sec. Sr No in National Register of Large Dams 2009 : <b>MH09MH0114</b>	22/04/2021 25/11/2021	Shri. S.S.Awate, Ex.Engr., OID-1, Osmanabad	Earthern dam	Dam section is not as per design. (B1)	<ol> <li>Detailed survey of the dam and dam section should be carried out.</li> <li>Dam section (Top width, side slopes, and drains) should be checked. Surveyed section should be superimposed on design section to ascertain whether earthen embankment is under section or not.</li> <li>Checking of crest profile is essential to identify the excessive/uneven settlement of the dam.</li> <li>Dam owner should figure out the cause of low area and supervise all steps necessary to reduce the threat to the dam and to correct the condition.</li> <li>Necessary repairs should be carried out.</li> </ol>			

		Settlement of pitching is observed. (B3)	1.Disturbed pitching should be identified chainage wise along the length of dam and should be repaired properly in accordance with provision given in IS 14954 (2001): Distress and remedial measures in earth and rock fill dams – Guidelines, with prior approval from competent technical authority.
-	Outlet	Outlet well is not in good condition.(A6)	1.Outlet well should be surged and cleaned to restore original working capacity of the well,.
-		Stem rod is bent up.(B5)	1.Necessary repairs should be carried out with the help of Mechanical Organisation.

SR N O	DAM FEATURES	DATE OF INSPECTIO N	INSPECTIN G OFFICER	MAIN COMPONE NT OF DAM	SIGNIFICANT DEFICIENCIES NOTICED.	REMEDIAL MEASURES SUGGESTED				
1	2	3	4	5	6	7				
III) S	III) Superintending Engineer & Administrator CADA, Beed									
1) Ex	1) Executive Engineer, Jayakwadi Irrigation Division - 3, Beed									
14	Name :- <b>DOMRI</b> Date of completion :- 1992 Location : - Longitude :- 75 34' 00"	04/04/2021 03/12/2021	Shri. D.B.Lokre Ex.Engr., JID- 3 Beed	Outlet	Leakage through gate observed (0.05 to 0.08 cusec) (A3) Stem rod gate is bent up. (B5)	1. Necessary repairs should be carried out with the help of Mechanical Organisation.				
	Latitude :- 18□ 54' 00 " Height :- m Gross capacity :- 11.215 Mm <sup>3</sup> Design Spillway capacity :- 1243 m3/sec. Sr. No. in National regi. Of large Dams 2009 :- MH09MH1409		<i>.,</i>	General	Access road is not maintained. (B6)	1.Access road should be provided, repaired and maintained properly				
1) Ex	xecutive Engineer, Majalgaon Irriga	tion Division, Pa	rali(V), Beed	1						
	Name :- KASARI Date of completion :- 1988 Location : - Longitude :- 75 04' 30" Latitude :- 18 45' 00" Height :- 15.52 m Gross capacity :- 0.872 Mm <sup>3</sup> Design Spillway capacity :- 142.80 m3/sec. Sr. No. in National regi. Of large Dams 2009 :- MH09MH0854	16/04/2021 10/11/2021	Shri. R.A.Salgarkar Ex.Engr. Maj.Irr.Dn., Parali (V), Beed	Earthen Embankment	Leakage through downstream slope noticed. (A1)	<ul> <li>1.Record the findings and photograph the area. Notes, sketches, and photographs are useful in documenting and evaluating seepage problems.</li> <li>2.Determine the extent, severity, and cause of the seepage. Measure and photograph any damage caused by the seepage so that its progression can be monitored if necessary.</li> <li>3.Always measure the seepage and flow rate with respect to reservoir water level on a regular and frequent Basis.</li> </ul>				

						<ul> <li>4.The seepage should be checked for turbidity which would show the presence of soil in the water.</li> <li>5.Search for opening on the upstream side and plug it if possible.</li> <li>6.Reservoir level may need to be lowered if saturated areas increase in size at a fixed storage level or if flow increases.</li> <li>7.Necessary repairs should be carried out in consultation with Central Design Organisation, Nashik.</li> </ul>
						1.Necessary repairs should be carried out with the help of Mechanical Organisation.
				Outlet	Outlet gate system is totally Disturbed. (B5)	
16	Name :- DAITHANA Date of completion :- Location : - Longitude :- 76 39' 50" Latitude :- 18 48' 10" Height :- 16.99 m Gross capacity :- 1.90 Mm <sup>3</sup> Design Spillway capacity :- 270.28 m3/sec. Sr. No. in National regi. Of large Dams 2009 :- MH09MH1603	28/04/2021 18/11/2021	Shri. R.A.Salgarkar Ex.Engr. Maj.Irr.Dn., Parali (V), Beed	E/Dam W.W. bar & TC	Standing pool of water on d/s side of dam.(A2) Boils wet patches, water seepage, and slushy boggy ground on d/s of dam. (A1)	<ul><li>1The cause of ponding should be identified and standing water shall betechno economically drained out to natural drains.</li><li>1.Determine the extent, severity, and cause of the seepage. Measure and photograph any damage caused by the seepage so that its progression can be monitored if necessary.</li></ul>

				<ul> <li>2.Always measure the seepage and flow rate with respect to reservoir water level on a regular and frequent Basis.</li> <li>3.The seepage should be checked for turbidity which would show the presence of soil in the water.</li> <li>4.Search for opening on the upstream side and plug it if possible.</li> <li>5.Reservoir level may need to be lowered if saturated areas increase in size at a fixed storage level or if flow increases.</li> <li>6.Necessary repairs should be carried out in consultation with Central Design Organisation, Nahik.</li> <li>7.The cause of ponding should be</li> </ul>
				identified and standing water shall betechno economically drained out to natural drains.
		Outlet	Stem rod is not straight. (B5)	1.Necessary repairs should be carried out with the help of Mechanical Organisation.
		General	All weather access road is not maintained properly.	1.Access road should be provided, repaired and maintained properly.

SR NO	DAM FEATURES	DATE OF INSPECTION	INSPECTING OFFICER	MAIN COMPONE NT OF DAM	SIGNIFICANT DEFICIENCIES NOTICED.	REMEDIAL MEASURES SUGGESTED
1	2	3	4	5	6	7
17	Name :- LIMBACHIWADI-2 Date of completion :- 2006 Location : - Longitude :- 76 06' 03" Latitude :- 18 04' 41" Height :- 17.95 m Gross capacity :- 1.40 Mm <sup>3</sup> Design Spillway capacity :- 661.50 m <sup>3</sup> /sec. Sr. No. in National regi. Of large Dams 2009 :- MH09MH2088	03/04/2021 30/11/2021	Shri. R.A.Salgarkar Ex.Engr. Maj.Irr.Dn., Parali (V), Beed	\W.W. bar & TC	Scoring occurred in tail channel d/s side of w.w. bar at guide wall (A7)	<ol> <li>The extent and location of such scouring with reference to the various components of dam, spillway, outlet, power house etc. should be identified with the respect to the levels and contour plans and reference marks.</li> <li>Dam owner should identify the cause of scouring.</li> <li>Necessary scouring protection work should be carried out with prior approval from competent technical authority.</li> <li>If scouring is extensive, scouring protection work should be done in consultation with Central Design Organisation, Nasik</li> </ol>
					EDA arrangement totally collapsed. (A14)	<ol> <li>Location, type, and extent of the deterioration of the EDA should be identified and photographed.</li> <li>Structural damages including misalignment, settlement, vertical and horizontal displacement should be checked.</li> </ol>

						<ul> <li>3.Survey or surface mapping to document all problems in the structure and their characteristics should be done thoroughly.</li> <li>4.Necessary repairs should be carried out in accordance with approved drawing with prior approval from competent technical authority.</li> <li>5.If deterioration is extensive, repairs to the EDA, should be done in consultation with Central Design Organisation, Nasik</li> </ul>
18	Name :- <b>DETHEWADI</b> Date of completion :- 2005 Location : - Longitude :- 75 58' 51" Latitude :- 18 52' 48" Height :- 21.88 m Gross capacity :- 1.409 Mm <sup>3</sup> Design Spillway capacity :- 236.80 m3/sec. Sr. No. in National regi. Of large Dams 2009 :- <b>MH09MH1649</b>	03/04/2021 13/11/2021	Shri. R.A.Salgarkar Ex.Engr. Maj.Irr.Dn., Parali (V), Beed	W.W. bar & TC	Leakage through joint of earthen dam and wing wall (d/s) Leakage noticed. (A3)	<ol> <li>Determine the extent, severity, and cause of the Leakage. Measure and photograph any damage caused by the Leakageso that its progression can be monitored if necessary.</li> <li>Always measure the Leakage and flow rate with respect to reservoir water levelon a regular and frequent basis The Leakage should be checked for turbidity which would show the presence of soil in the water.</li> <li>Search for opening on the upstream side and plug it if possible.</li> <li>Necessary repairs should be carried out with the help of Mechanical Organisation</li> </ol>

SR NO	DAM FEATURES	DATE OF INSPECTION	INSPECTING OFFICER	MAIN COMPONE NT OF DAM	SIGNIFICANT DEFICIENCIES NOTICED.	REMEDIAL MEASURES SUGGESTED
1	2	3	4	5	6	7
<b>B)</b> C	hief Engineer, WR, Aurangabad					
I) Su	perintending Engineer, NIC, Nand	ed				
1) Ex	ecutive Engineer, NID (North), Na	inded				
19	Name : <b>DONGARGAON</b> Date of completion : 1984 Location : Longitude : 78 09' 30" Latitude : 19 26' 30" Gross Capacity :9.607Mm3 Height : 22.60 m. Design spillway Capacity 728.97 m3/sec. Sr No in National Register of Large Dams 2009 : MH09LH1028	14/05/2021 12/11/2021	Shri. N.P.Gavhane EE, NID (North), Nanded	Outlet W.W.Bar & TC	Outlet gate does not functioning properly. Stem rod is bent up. (B5) W.W.bar is not in good condition. Leakage through body is observed.(B7) U/s & D/s side of bar needs coping. (B7)	<ol> <li>Necessary repairs should be carried out with the help of Mechanical Organisation</li> <li>Source of leakage should be identified chainage wise along the length of waste weir bar and leakages should be quantified with respect to reservoir water level.</li> <li>Investigations for seepage should be carried out as per relevant provisions mentioned inpara5.2.2.2 Investigations for seepage of Manual for Rehabilitation of Large Dams (Page 47 of 112) published by Central Water Commission.</li> <li>Location, type, and extent of the damages of the w.w.bar should be identified and photographed</li> <li>W.W. Bar may be repaired in accordance with approved drawing and relevant IS codes.</li> </ol>

					Guide wall and divide walls are fully damaged.(3.16)	<ul><li>1.Location, type, and extent of the damages of the Guide wall and divide walls should be identified and photographed.</li><li>2.Necessary repairs should be carried out.</li></ul>
20	Name : <b>PALAIGUDA</b> Date of completion : 1999 Location : Longitude : 78 04' 40" Latitude : 19 04' 40" Gross Capacity :5.95Mm3 Height : 19.80 m. Design spillway Capacity 193.10 m3/sec. Sr No in National Register of Large Dams 2009 : MH09MH1513	15/05/2021 13/11/2021	Shri. N.P.Gavhane EE, NID (North), Nanded	Earthern Dam	Junction of well and embankment at RD 960m is settle down by 2m depth and 1m width.(B3)	<ul> <li>1.Detailed survey of the dam and dam section should be carried out.</li> <li>2.Dam section (Top width, side slopes, and drains) should be checked.</li> <li>Surveyed section should be superimposed on design section to ascertain whether there is settlement of earthen embankment or not.</li> <li>3.Dam owner should figure out the cause of low area and supervise all steps necessary to reduce the threat to the dam and to correct the condition.</li> <li>4.Necessary repairs should be carried out.</li> </ul>
					Outlet gate does not functioning properly. Stem rod is bent up. (B5)	carried out with the help of Mechanical Organisation.
					Major cracks to UCR masonry of outlet well near girder portion.(A6)	1.Outlet well should be repaired to restore original working capacity of the well, with prior approval from competent technical authority

SR NO	DAM FEATURES	DATE OF INSPECTIO N	INSPECTI NG OFFICER	MAIN COMPONE NT OF DAM	SIGNIFICANT DEFICIENCIES NOTICED.	REMEDIAL MEASURES SUGGESTED				
1	2	3	4	5	6	7				
1) Execu	1) Executive Engineer, NID (South), Nanded									
21	Name : <b>SONPETHWADI</b> Date of completion : 1974 Location : Longitude : 77 20' 00" Latitude : 18 70' 00" Gross Capacity :1.695Mm3 Height : 15.10 m. Design spillway Capacity 274.20 m3/sec. Sr No in National Register of Large Dams 2009 : MH09MH0535	NR 10/12/2021	Shri. N.V.Pattewar EE, NID (South), Nanded	W.W.Bar & TC	Scouring is observed on d/s side of bar. Cavity is formed below foundation due to heavy scouring. (A7)	<ol> <li>The extent and location of such scouring with reference to the various components of dam, spillway, outlet, power house etc. should be identified with the respect to the levels and contour plans and reference marks.</li> <li>Dam owner should identify the cause of scouring.</li> <li>Necessary scouring protection work should be carried out with prior approval from competent technical authority.</li> <li>If scouring is extensive, scouring protection work should be done in consultation with Central Design Organisation, Nasik .</li> </ol>				
					Masonry spillway bar is not in good condition. (B7)	<ol> <li>Location, type, and extent of the damages of the spillway bar should be identified and photographed.</li> <li>Necessary repairs should be carried out.</li> </ol>				

22	Name : YEDUR (ST)	15/06/2021	Shri.	Earthern Dam	Section is not as per design.(B1)	1.Detailed survey of the dam and dam
	Date of completion: 2005	09/12/2021	A.S.Chougule			section should be carried out.
	Location :		EE, NID			2Dam section (Top width, side
	Longitude : 77 18' 00"		(South),			slopes, and drains) should be checked.
	Latitude : 18 38' 00"		Nanded			Surveyed section should be
	Gross Capacity :13.167Mm3					superimposed on design section to
	Height : 18.01 m.					ascertain whether earthen
	Design spillway Capacity					embankment is under section or not.
	1744 m3/sec.					
	Sr No in National Register of					
	Large Dams 2009 :					
	MH09MH1646					

		W.W.Bar & TC	Leakage through body of W.W.bar is observed.(B7) U/s and D/s face needs pointing.(B8)	<ul> <li>3.Dam owner should figure out the cause of low area and supervise all steps necessary to reduce the threat to the dam and to correct the condition.</li> <li>4.Necessary repairs should be carried out.</li> <li>1.Source of leakage should be identified chainage wise along the length of waste weir bar and leakages should be quantified with respect to reservoir water level.</li> <li>2.Investigations for seepage should be carried out as per relevant provisions mentioned inpara5.2.2.2 Investigations for seepage of Manual for Rehabilitation of Large Dams (Page 47 of 112) published by Central Water Commission.</li> <li>Location, type, and extent of the damages of the spillway bar should be identified and photographed.</li> <li>4.Necessary repairs should be carried out.</li> </ul>
				out.

SR		DATE OF	INSPECTI	MAIN	SIGNIFICANT	REMEDIAL MEASURES
NO	DAM FEATURES	INSPECTIO	NG	COMPONE	DEFICIENCIES NOTICED	SUGGESTED
110		N	OFFICER	NT OF DAM	DEFICIENCIES NOTICED.	SUGGESTED
1	2	3	4	5	6	7
I) Superi	ntending Engineer, BIPC, Parali(V)	, Beed				
1) Execu	tive Engineer, LMID, Latur					
23	Name : GHONSHI M.I.Tank	NR	Shri.	Earthen	Settlement is noticed. Dam top is	1.Detailed survey of the dam and dam
	Date of completion: 1991	17/11/2021	M.R.Kale	Dam	shrinked 1.0 to 1.50 m depth in	section should be carried out.
	Location :		Ex.Engr.,		chainage 90 m to 840 m. (B3)	
	Longitude : 77 09' 20"		LMID, Latur			
	Latitude : 18 31' 45"				Section of dam is not as per design	2.Dam section (Top width, side
	Gross Capacity :1.247 Mm3				section in respect of top of the dam	slopes, and drains) should be checked.
	Height : 19.85 m.				and slope. (B1)	Surveyed section should be
	Design spillway Capacity					superimposed on design section to
	494.08 m3/sec.					ascertain whether earthen
	Sr No in National Register of					embankment is under section or not.
	Large Dams 2009 :					3.Checking of crest profile is essential
	MH09LH1226					to identify the excessive/uneven
						settlement of the dam.
						4.Dam owner should figure out the
						cause of low area and supervise all
						steps necessary to reduce the threat to
						the dam and to correct the condition.
						5.A uniform crest elevation may be re-
						established over the crest length by
						placing proper filler material in the
						low area in accordance with relevant
						IS codes with prior approval from
						competent technical authority

		Dislocation of pitching at ch 200	1.Disturbed pitching should be
		to 700 m is observed. (B3)	identified chainage wise along the
			length of dam and should be
			repaired properly in accordance
			with provision given in IS 14954
			(2001): Distress and remedial
			measures in earth and rock fill
			dams – Guidelines, with prior
			approval from competent technical
			authority

		D/s cross drains and toe drains are	Drains should be cleaned and
		not functioning well.(B2)	desilted for carring effective flow
		0 ( )	of water.
		Wet patches at d/s of dam at THL	1.Determine the extent, severity,
		level from RD 270 m to 390 m	and cause of the wet patches .
		(A1)	Measure andphotograph any
			damage caused by the wet patches
			so that its progression can be
			monitored if necessary.
			2. Always measure the seepage and
			flow rate with respect to reservoir
			water levelon a regular and
			frequent basis The seepage should
			be checked for turbidity which
			would show thepresence of soil in
			the water.
			3.Search for opening on the
			upstream side and plug it if
			possible.
			4.Reservoir level may need to be
			lowered if saturated areas increase
			in size at a fixed storage level or if
			flow increases.
			5.Necessary repairs should be
			carried out.

	Outlet	Outlet gate are not open & close smoothly.(B5)	1.Necessary repairs should be carried out.
		Coping over spillway at some places is dislocated. (B7)	1.Location, type, and extent of the damages of the spillway bar should be identified and photographed
		U/s and d/s face needs pointing. (B8)	2.Necessary repairs should be carried out.

## Table 3.15

## Damwise Health status report of Class-II dams with category-3 deficiency

Sr. No	Name of Dam	Year of Compl -etion	Location Longitude / Latitude	Height in m	Gross Capacity Mm <sup>3</sup>	Design Spillway Capacity m <sup>3</sup> / sec	Sr.No. in NRLD Register	Gated / Ungated	Date of Inspection	Deficiencies noticed	Total Deficien cies		
1	2	3	4	5	6	7	8	9	10	11	12		
[A] C	CHIEF ENGIN	JEER &	CHIEF AD	MINISTI	RATOR, C	ADA, AUR	ANGABAD.						
I) Sup	perintending En	ngineer &	& Administra	tor, CAD	A, Aurang	abad							
1) Ex	I) Executive Engineer, Jalna Irrigation Division, Jalna												
1	Galhati	1964	75°21'00" 20°44'00"	17.70	10.73	219	MH09MH0755	Ungated	24/05/2021 22/04/2021	3.7,3.9,3.2,3.13,3.21,3.20,3.22, 3.19,3.1	09		
2	Dhoksal	1964	75°21'00" 20°44'00"	17.70	10.73	219	MH09MH0755	Ungated	15/05/2021 NA	3.7,3.9,3.2,3.21,3.16	05		
3	Kalyan Pir	1986	75°02'00" 19°51'00"	16.41	15.36	1315	MH09MH1138	Ungated	27/04/2021 28/10/2021 28/10/2021	3.7,3.9,3.20,3.13,3.21,3.16	06		
4	Upper Dudhna	1964	75°42'00" 19° 54' 00"	18.00	12.36	1912	MH09MH0099	Ungated	27/05/2021 22/04/2021 28/10/2021	3.2,3.9,3.7,3.13,3.20,3.19,3.5	07		
5	Jivrekha	1964	75°58'00" 20°51'00"	20.00	7.00	1083	MH09MH0097	Ungated	24/05/2021 02/11/2021	3.5,3.7,3.2,3.9,3.21,3.13,3.20, 3.34,3.6,3.1,3.16	11		
6	KalyanGirja	1972	76°109'40" 19°50'00"	22.07	10.16	1310	MH09MH0312	Ungated	27/04/2021 27/04/2021	3.7,3.9,3.5,3.2,3.13,3.34,3.21, 3.16,3.19	09		
7	Jui	1960	75°46'00" 20°20'00"	15.00	9.00	1643	MH09MH0082	Ungated	27/05/2021 29/11/2021 28/10/2021	3.7,3.2,3.9,3.13,3.21,3.20,3.6, 3.19,3.1,3.16	10		
8	Bharaj	1964	76°06'00" 20°19'00"	15.46	2.32	355	MH09MH0928	Ungated	24/05/2021 02/11/2021	3.5,3.2,3.7,3.9,3.21,3.13,3.20, 3.1,3.22,3.16	10		
9	Pimparkheda	1966	76°22'30" 19°43'00"	15.20	1.54	194	MH09MH0120	Ungated	15/05/2021 NA	3.7,3.2,3.9,3.13,3.22,3.21,3.16	07		
10	Konad	1994	76°10'00" 20°16'00"	16.16	4.03	620	MH09MH0352	Ungated	24/05/2021 02/11/2021	3.5, 3.2, 3.13, 3.21, 3.9, 3.1, 3.16	07		
11	Dhamna	1974	76°50'20" 20°27'00"	13.45	10.72	1388	MH09LH0450	Ungated	27/05/2021 02/11/2021	3.2,3.9,3.13,3.3,3.21,3.20,3.1 9,3.1,3.16	09		

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Sr. No	Name of Dam	Year of Com pl- etion	Location Longitude / Latitude	Height in m	Gross Capacity Mm <sup>3</sup>	Design Spillway Capacity m <sup>3</sup> / sec	Sr.No. in NRLD Register	Gated / Ungated	Date of Inspection	Deficiencies noticed	Total Deficien cies
1	2	3	4	5	6	7	8		9	10	11
2) Ex	ecutive Engine	eer, Aura	angabad Irrig	gation Di	vision, Aur	angabad					
12	Ajanta Andhari	1982	75°46'00" 20°31'00"	21.00	7.53	781	MH09MH0941	Ungated	03/05/2021 NR	3.13,3.33	02
13	Devhari (Soygaon)	1987	78°36'00" 19°36'00"	15.60	1.907	256	MH09MH2072	Ungated	10/05/2021 NR	3.5,3.7,3.2,3.13,3.22,3.20,3.33	07
14	Gadadgad	1970	75°13'00" 20°14'00"	21.00	5.49	885	MH09MH0222	Ungated	13/05/2021 15/12/2020	3.1,3.13,3.34	03
15	Kelgaon	1973	75°40'00" 20°24'00"	16.15	2.13	396	MH09MH0364	Ungated	30/05/2021 NR	3.7,3.34,3.3,3.21,3.2,3.22,3.33	05
16	Khelna	1964	75°40'00" 20°24'00"	21.00	15.00	1318	MH09MH0098	Ungated	03/05/2021 NR	3.7,3.2,3.13,3.10,3.21,	05
17	Lahuki	1978	75°34'00" 19°54'30"	17.00	5.68	963	MH09MH0733	Ungated	28/04/2021 NR <b>27/10/2021</b>	3.5,3.2,3.13,3.34,3.9,3.20	06
18	Nimbhora	1981	75°12'00" 20°19'00"	17.60	1.56	211	MH09MH0897	Ungated	20/05/2021 NR 26/10/2021	3.2,3.5,3.13,3.21,3.20	05
19	Varthan	1972	75°23'00" 20°30'00"	15.50	1.57	210	MH09MH0279	Ungated	10/05/2021 NR 26/10/2021	3.1,3.5,3.13,3.34,3.21,3.20	06
20	Waghdara	1975	75°56'00" 20°54'30"	15.00	3.47	454	MH09MH0507	Ungated	20/05/2021 NR 26/10/2021	3.2,3.7,3.13,3.34,3.20	05
21	Anjana Palashi	1999	75°19'00" 20°17'00"	19.40	15.55	1167	MH09MH1519	Ungated	20/05/2021 NR	3.2,3.13,3.22,3.20,3.28	05
22	Purna Neopur	1998	75°19'40" 20°23'00"	16.60	11.38	1184	MH09MH1484	Ungated	13/05/2021 NR	3.7,3.5	02
23	Loni (Kannad)	1988	75°14'45" 20°09'25"	16.00	0.860	114	MH09MH1185	Ungated	26/04/2021 NR	3.5,3.7,3.2,3.9,3.13,3.22,3.19	07
24	Chapner	1973	76°03'00" 20°09'00"	21.00	1.96	251	MH09MH0352	Ungated	13/05/2021 NR	3.2,3.34,3.20,3.28	04

Sr. No	Name of Dam	Year of Com pl- etion	Location Longitude / Latitude	Height in m	Gross Capacity Mm <sup>3</sup>	Design Spillway Capacity m <sup>3</sup> / sec	Sr.No. in NRLD Register	Gated / Ungated	Date of Inspection	Deficiencies noticed	Total Deficien cies
1	2	3	4	5	6	7	8		9	10	11
25	Ambadi	1975	75°06'00" 20°56'00"	20.00	12.00	1412	MH09MH0737	Ungated	13/05/2021 NR 26/10/2021	3.2,3.20,3.24	03
26	Nirgudi	1967	75°14'45" 20°09'25"	19.35	2.43	405	MH09MH0145	Ungated	26/04/2021 NR	3.5,3.7,3.9,3.2,3.13,3.34,3.22, 3.16	08
27	Dheku	1960	74°50'00" 20°7'00"	20.00	1.40	1945	MH09MH0083	Ungated	27/05/2021 NR	3.2,3.34,3.21,3.16,3.9,3.22, 3.20	07
28	Kesapuri	1975	75º00'06" 19º00'50"	16.71	1.721	814.43	MH09MH0291	Ungated	28/11/2021 NR	3.2,3.34,3.13	03
29	Sanjul	1967	75°25'00" 20°07'00"	21.00	3.08	542	MH09MH0149	Ungated	26/04/2021 NR	3.2,3.9,3.1,3.13,3.34,3.21,3.28,3.1 6	08
30	Kaldari	2000	75°15'30" 20°29'00"	17.70	3.90	360	MH09MH0880	Ungated	13/05/2021 NR	3.7,3.2,3.13,3.34,3.20	05
31	Soyegaon	1967	75°35'00" 20°33'00"	17.50	2.54	480	MH09MH0148	Ungated	10/05/2021 NR <b>26/10/2021</b>	3.7,3.2,3.13,3.21	04
32	Banoti	1968	75°20'00" 19°56'00"	19.69	3.88	535.07	MH09MH0165	Ungated	13/05/2021 NR	3.5,3.24,3.20,3.16	04
33	Sukhna	1966	75°31'00" 19°49'00"	16.92	21.35	1745	MH09MH0168	Ungated	26/04/2021 NR 27/10/2021	3.7,3.2,3.9,3.1,3.13,3.34	06
34	Girija	1986	75º 20'15" 20º06'00"	19.10	24.500	1620	MH09MH1139	Ungated	26/04/2021 NR	3.1,3.2,3.13,3.34,3.21,3.9,3.20	07
35	Pardari ST	2006	75º 24'30" 19º00'00"	22.34	2.26	337	MH09MH2287	Ungated	28/04/2021 NR	3.2,3.9,3.13,3.34	04

Sr. No	Name of Dam	Year of Com pl- etion	Location Longitude / Latitude	Height in m	Gross Capacity Mm <sup>3</sup>	Design Spillway Capacity m <sup>3</sup> / sec	Sr.No. in NRLD Register	Gated / Ungated	Date of Inspection	Deficiencies noticed	Total Deficien cies
1	2	3	4	5	6	7	8	9	10	11	12
3) Ex	ecutive Engine	eer, Nar	dur Madhm	eshwar Iı	rigation D	ivision, Vai	<b>japur, Dist</b> Aurai	ngabad	1	1	1
36	Bhilwani	1972	74º 44'00" 20º08'00"	18.00	9.10	225	MH09MH0283	Ungated	NR NR		
37	Manyad	2006	74º 44'00" 20º09'00	27.70	4.75	1325	MH09MH2091	Ungated	NR NR		
38	Tembhapuri	1994	75º 11'00" 19º44'00	16.42	21.26	20.38	MH09MH1341	Ungated	Not mentioned NR	3.13,3.34	02
4)Exe	cutive Engine	er, Jaya	kwadi Irrigat	tion Divis	ion-2, Part	hani				ł	
39	Masoli	1981	76°45'05" 18°54'10"	24.84	34.08	2038	MH09MH0903	Ungated	12/04/2021 16/12/2021	3.5, ,3.13,3.34	03
40	Padali	1981	76°19'30" 18°37'45"	15.00	2.91	326	MH09MH0875	Ungated	07/04/2021 15/12/2021	3.9,3.2,3.13,3.22,3.21	05
41	Bhoshi	1972	76°57'00" 18°51'00"	16.60	2.22	435	MH09MH1046	Ungated	06/04/2021 15/12/2021	3.7,3.9,3.2,3.13,3.22,3.34,3.21,3.6	08
42	Tandulwadi	1972	76°57'00" 18°51'00"	16.60	2.22	453	MH09MH0300	Ungated	12/04/2021 16/12/2021	3.9,3.5,3.7,3.13	04
43	Karpara	1975.	76°38'02" 17°30'42"	16.60	27.32	2033	MH09MH0531	Ungated	18/05/2021 15/12/2021	3.13,3.2,3.34,3.21	04
44	Pimpaldari (gangakhed)	1970	77º11'00" 19º34'00"	14.32	24.46	323	MH09LH0210	Ungated	NR NR		
II) Su	perintending I	Enginee	er & Adminis	trator, CA	ADA, Latur						
1) Exe	ecutive Engine	er, Latu	r Irrigation	Division-	l, Latur						
45	Kasarbalkund	1968	76°°00" 17°20"	16.50	2.489	374.9	MH09MH0429	Ungated	NR NR		
46	Tawarja	1982	76°19'00" 18°24'00"	14.56	27.727	1903	MH09LH0944	Ungated	NR NR		
47	Bhusani L.L.Barrage	2008	76°30'18" 18°21'09"	21.00	14.90	2526	MH09MH2182	Ungated	NR NR		

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Sr. No	Name of Dam	Year of	Location Longitude/	Height in m	Gross Capacity	Design Spillway	Sr.No. in NRLD Register	Gated / Ungated	Date of Inspection	Deficiencies noticed	Total Deficienc
		Comp 1-etion	Latitude		Mm <sup>3</sup>	Capacity m <sup>3</sup> / sec					ies
1	2	3	4	5	6	7	8	9	10	11	12
2) Ex	ecutive Engine	er, Lat	ur Irrigation	Division	-2, Latur	1				•	-
48	Anandwadi	2002	76015"	18.80	2.026	256.84	MH09MH1607	Ungated	16/05/2021	3.2,3.5,3.7,3.13,3.9	05
			180"30					_	21/11/2021		
49	Kendrewadi	2013	76°44'15"	15.80	2.258	305.344	MH09MH2278	Ungated	19/05/2021	3.2,3.5,3.7,3.19	04
			18°37'00"						21/11/2021		
50	Halad	2001	77°13'55"	19.15	3.693	442.28	MH09LH1510	Ungated	09/05/2021	3.2,3.7,3.9,3.13	04
	Wadhona		18°36'35"						23/10/2021		
51	Sonala (ST)	2006	77°08'10"	16.3	5.491	1119	MH09MH2289	Ungated	09/05/2021	3.2,3.5,3.9,3.13	04
			18°35'16"						21/11/2021		
52	Halli (Kh)	2008	76°51"30"	21.00	1.467	138.854	MH09MH2274	Ungated	19/05/2021	3.2,3.5,3.7,3.9,3.13,3.16,3.19	07
			18008"00"						21/11/2021		
53	Sakol	1992	76°14'00"	17.50	12.689	1153	MH09MH1297	Ungated	21/05/2021	3.5, 3.7, 3.9, 3.13, 3.21, 3.34, 3.5	07
			18°18'00"						07/12/2021		
									23/11/2021		
54	Andhori (ST)	2006	76°47'10"	17.00	2.1624	192.98	MH09MH2267	Ungated	17/05/2021	3.2,3.9,3.13,3.34	04
			18°46'00"						15/11/2021		
55	Devarjan	1993	77°00'00"	15.20	12.411	1135.36	MH09MH1317	Ungated	21/05/2021	3.7,3.9,3.13,3.20,3.21,3.22,3.34	07
			18°19'00"						06/12/2021		
56	Kodali (ST)	2004	77°13'10"	18.96	1.72	165.05	MH09MH2279	Ungated	13/05/2021	3.5,3.9,3.13	03
			18°28'15"						01/12/2021		
57	Tiru	1976	77°04'06"	21.00	23.32	1994	MH09MH0595	Ungated	13/05/2021	3.2,3.9,3.13,3.21	04
			18°25'22"						25/11/2021		
									24/11/2021		
58	Gharani	1996	76°49'15"	16.76	22.08	2248	MH09MH0194	Ungated	21/05/2021	3.2,3.3.9,3.21,3.34,3.6	05
			18°22'30"						07/12/2021		
59	Bhutekarwadi	1967	76°51'00"	16.50	3.31	593	MH09MH0150	Ungated	19/05/2021	3.7,3.10,3.13,3.22	04
			18°37'00"						14/11/2021		

Sr. No	Name of Dam	Year of Com pl- etio n	Location Longitude / Latitude	Height in m	Gross Capacity Mm <sup>3</sup>	Design Spillway Capacity m <sup>3</sup> /sec	Sr.No. in NRLD Register	Gated / Ungated	Date of Inspection	Deficiencies noticed	Total Deficien cies
1	2	3	4	5	6	7	8	9	10	11	12
60	Ekurka	1973	77°04'00" 18°29'00"	15.15	1.64	191	MH09MH0342	Ungated	13/05/2021 24/10/2021	3.7, 3.9, 3.13, 3.21, 3.34, 3.1	06
61	Gotala	1971	76°52'39" 18°38'00"	15.63	3.43	336	MH09MH0252	Ungated	18/05/2021 21/11/2021 24/11/2021	3.2,3.5,3.7,3.9,3.13	05
62	Mogha	1990	77°00'00'' 18°43'00''	16.90	7.89	1049	MH09MH1247	Ungated	16/05/2021 15/04/2021	3.2,3.1,3.7,3.9,3.13,3.16,3.20, 3.21,3.22,3.2,3.34,3.6,3.35	12
63	Sukhani	1995	76°43'00" 18°40'00"	16.82	1.21	192	MH09MH0834	Ungated	12/05/2021 19/10/2021	3.1,3.7,3.9,3.13,3.20	05
64	Yester	2002	76°48'00" 18°46'00"	15.05	2.162	565.81	MH09MH1561	Ungated	16/05/2021 17/11/2021	3.2,3.7,3.9,3.13,3.16,3.21,3.34	07
65	Thodga	1995	76°32'30" 18°42'30"	18.83	5.63	688	MH09MH1401	Ungated	16/05/2021 08/11/2021	3.2,3.5,3.7,3.9,3.13,3.16,3.20, 3.21,3.22,3.34,3.35,3.6	12
66	Pimpri	1974	76°07'65" 18°15'30"	16.50	2.20	1203	MH09MH0425	Ungated	13/05/2021 01/12/2021	3.2,3.5,3.7,3.9,3.13,3.21,3.22	07
67	FattuNaik Tanda (ST)	2007	74°47'00" 18°35'00"	19.5	1.368	118.58	MH09MH2271	Ungated	19/05/2021 21/11/2021	3.2,3.5,3.7,3.13,3.16,3.19	06
68	Yeldari	2002	76°50'00" 18°49'00"	19.80	1.32	122	MH09MH1601	Ungated	17/05/2021 15/11/2021	3.2,3.5,3.7,3.9,3.10,3.13,3.16, 3.21,3.22,3.34	10
69	Sangamwadi	2010	76°59'26" 18°29'00"	20.02	8.554	964	MH09MH2102	Ungated	24/05/2021 17/10/2021	3.1,3.9,3.13,3.20	04
70	Karepur	2004	75°06'00" 20°56'00"	20.00	12.00	1412	MH09MH0737	Ungated	12/05/2021 29/10/2021	3.9,3.13,3.6	03
71	Borol	2006	77°05'55" 18°05'00"	17.41	3.51	325.11	MH09MH2427	Ungated	21/05/2021 04/12/2021 23/11/2021	3.2,3.5,3.7,3.9,3.10,3.13,3.19, 3.16	08
72	Bokani	1992	77°01'00" 18°527'00"	17.03	9.45	1258	MH09MH1337	Ungated	21/05/2021 04/12/2021	3.5,3.9,3.10,3.13,3.34	05
73	Guredhal MI Tank	1998	77°23'30" 18°35'15"	20.70	3.77	580	MH09MH1489	Ungated	13/05/2021 01/12/2021	3.2,3.7,3.9,3.21,3.34,3.6	06

Sr. No	Name of Dam	Year of Com pl- etio n	Location Longitude / Latitude	Height in m	Gross Capacity Mm <sup>3</sup>	Design Spillway Capacity m <sup>3</sup> /sec	Sr.No. in NRLD Register	Gated / Ungated	Date of Inspection	Deficiencies noticed	Total Deficien cies
1	2	3	4	5	6	7	8	9	10	11	12
74	Nagthana	1993	76°49'45" 18°37'46"	19.31	6.48	961	MH09MH1316	Ungated	19/05/2021 14/11/2021	3.7,3.9,3.13,3.19,3.34	05
75	Bothi	1978	77°40'00" 19°05'00"	19.15	1.82	175	MH09MH0860	Ungated	24/05/2021 17/10/2021	3.9,3.2	02
76	Gutti no.1	2005	77°12'00" 18°30'00"	16.71	3.08	553.08	MH09MH1652	Ungated	09/05/2021 02/12/2021	3.2,.3.5,3.9,3.13	04
77	Gutti ST-2	2009	77°15'00" 18°32'00"	16.69	2.413	142.214	MH09MH2272	Ungated	09/05/2021 02/12/2021	3.5, 3.2, 3.9, 3.13	04
78	Kaudgaon	2003	77°51'45" 18°35'15"	15.30	2.29	375	MH09MH1581	Ungated	16/05/2021 08/11/2021	3.2,3.5,3.7,3.9,3.13	05
79	Whati	1980	76º 44' 00" 18º 39' 00"	17.30	9.51	997	MH09MH0840	Ungated	18/05/2021 24/11/2021 24/11/2021	3.2,3.13,3.21,3.19	04
80	Nagzari (ST)	2011	76º 55' 30'' NA	17.33	1.458	127.28	MH09MH1057	Ungated	17/05/2021 17/11/2021	3.5, 3.9, 3.2,3.16	04
81	Mandurki (ST)	2008	76º 18' 00" 18º 30' 00"	20.40	1.332	596.7	MH09MH2282	Ungated	24/05/2021 17/10/2021	3.2,3.7,3.9,3.16	04
82	Mavalgaon (ST)	2010	77º 10' 30" 18º 41' 45"	15.1	1.15	103.1	MH09MH2283	Ungated	18/05/2021 17/11/2021	3.5, 3.13	02
83	Khandli (ST)	2006	$\begin{array}{c} 76^{0} \ 52' \ 00'' \\ 18^{0} \ 50' \ 00'' \end{array}$	22.08	85.254	300	MH09MH2428	Ungated	17/05/2021 17/11/2021	3.1,3.5,3.7,3.9,3.13,3.16,3.19	07
84	Kawalwadi (ST)	2008	$\frac{76^{\circ}}{18^{\circ}}\frac{47'}{60''}$	17.00	2.1624	192.98	MH09MH2276	Ungated	18/05/2021 15/11/2021	3.5, 3.7, 3.16, 3.9, 3.13 ,3.34	06
85	Rachanwadi	1996	77°40'00" 19°50'00"	19.54	5.327	772.47	MH09LH1405	Ungated	24/05/2021 17/10/2021	3.7,	01
86	Kalegaon	2008	77°12'30" 18°43'30"	18.17	9.61	1158	MH09MH2080	Ungated	18/05/2021 14/11/2021	3.2,3.9,3.13,3.16	04
87	Dhorsangvi	1979	76°49'15" 18°22'30"	15.30	2.24	370.5	MH09MH0777	Ungated	09/05/2021 24/10/2021	3.5,3.9,3.13,3.16	04
88	Molvan (ST)	2010	76°45'30" 18°46'00"	18.60	1.02	103.11	MH09MH2094	Ungated	18/05/2021 15/11/2021	3.2,3.5,3.9,3.10,3.13,3.21,3.7	07

DSO-ADHSR-2021-22/ MARATHWADA

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Sr. No,	Name of Dam	Year of Com pl- etio n	Location Longitude / Latitude	Height in m	Gross Capacity Mm <sup>3</sup>	Design Spillway Capacity m <sup>3</sup> /sec	Sr.No. in NRLD Register	Gated / Ungated	Date of Inspection	Deficiencies noticed	Total Deficien cies
1	2	3	4	5	6	7	8	9	10	11	12
89	Dongargaon (ST)	2008	77°12'00" 18°34'00"	18.96	3.967	439.767	MH09MH1093	Ungated	09/05/2021 23/10/2021	3.7,3.2,3.9,3.13	04
90	Chandegaon (ST)	2014	77°13'00" 18°24'06"	19.00	4.5287	762.87	MH09MH2268	Ungated	13/05/2021 01/12/2021	3.13	01
91	Nideban (ST)	2006	77°08'30" 18°22'400"	24.07	1.520	180.74	MH09MH2285	Ungated	13/05/2021 01/12/2021	3.2,3.5,3.7,3.9,3.13	05
92	Doul Hipparga (MI)	2005	77°30'00" 18°15'00"	17.05	4.06	873.67	MH09MH2270	Ungated	13/05/2021 02/12/2021	3.2, 3.13	02
93	Malihipparga (ST)	2012	77°14'00" 18°13'00"	21.40	4.075	819.62	MH09MH2281	Ungated	09/05/2021 23/10/2021	3.2, 3.13, 3.16	03
94	Ravankola (ST)	2011	77°14'00" 18°36'00"	15.46	1.272	117.07	MH09MH2288	Ungated	09/05/2021 23/10/2021	3.5,3.7,3.2,3.9,3.13	05
95	Dhondwadi (ST)	2005	77°11'00" 18°32'40"	16.53	1.059	127.47	MH09MH2269	Ungated	09/05/2021 02/12/2021	3.9, 3.2, 3.13	03
96	KekatSindagi (ST)	2012	70°10'45" 18°4'45"	15.50	1.634	137.98	MH09MH2277	Ungated	09/05/2021 24/10/2021	3.2,3.9,3.13,3.16,3.19	05
97	Hagdul- Gugdal (ST)	2006	76°00'00" 18°45'00"	15.5	2.817	882.42	MH09MH2273	Ungated	17/05/2021 17/11/2021	3.9, 3.13	02
98	Renapur	2000	76°35'00" 18°35'00"	10.02	21.69	1993.21	MH09MH1555	Ungated	09/04/2021 NR	3.5, 3.2, 3.9, 3.10, 3.13	05
99	Phanharwadi MI Tank(Shirur anantphal)	1984	2	17.64	24.52	284.75	MH09MH2286	Ungated	NR NR		

Sr. No	Name of Dam	Year of	Location Longitude	Height in m	Gross Capacity	Design Spillway	Sr.No. in NRLD	Gated / Ungated	Date of Inspection	Deficiencies noticed	Total Deficien
		1-	/ Latitude		WIIII	$m^3 / sec$	Register				cies
		etion									
1	2	3	4	5	6	7	8	9	10	11	12
3) Ex	ecutive Enginee	er, Osma	anabad Irriga	ation Div	ision -1, Os	smanabad		•	·	·	
100	Chandani	1965	75°32'00" 18°15'00"	17.18	20.7	3030	MH09MH0114	Ungated	10/05/2021 25/11/2021	3.1,3.2,3.9,3.10,3.13,3.20,3.21	07
101	Terna	1970	76°07'30" 18°19'49"	15.00	22.91	2487	MH09MH0232	Ungated	28/04/2021 19/10/2021	3.2,3.13,3.19,3.20	04
102	Ramganga	1977	75°37'00" 18°31'00"	21.01	6.136	1305	MH09MH0650	Ungated	22/04/2021 18/11/2021	3.2, 3.7,3.9,3.13,3.21,3.22,3.34,3.6	08
103	Sangamesh war	2005	75°37'00" 18°37'00"	15.25	16.82	2473.99	MH09MH1381	Ungated	26/04/2021 18/11/2021	3.2,3.7,3.9,3.10,3.13,3.21,3.34	07
104	Khandeshwar	1978	75°25'00" 18°30'00"	17.14	10.84	800	MH09MH0730	Ungated	10/05/2021 25/11/2021	3.2,3.9,3.20,3.22	04
105	Sakat	1997	75°44'00" 18°28'00"	19.80	14.43	1686	MH09MH1339	Ungated	10/05/2021 25/11/2021	3.1,3.7,3.9,3.13,3.20,3.21	06
106	Gaosud	1995	76°2'00" 18°7'25"	16.75	1.700	198.78	MH09MH1354	Ungated	04/05/2021 26/11/2021	3.2,3.7,3.9,3.10,3.13,3.21,3.34,3.2 0	08
107	Raghuchiwadi	1975	76°10'00" 18°09'00"	16.75	2.07	354	MH09MH0576	Ungated	04/05/2021 26/11/2021	3.2,3.7,3.9,3.10,3.13,3.21,3.34,,3. 6	08
108	Ambehole ST	2011	76°02'00" 18°12'00"	20.45	4.15	105.19	MH09MH2266	Ungated	04/05/2021 26/11/2021	3.1,3.2,3.9,3.10,3.13	05
109	Wadgi	1998	75°59'10" 18°27'00"	18.84	2.39	319.5	MH09MH1464	Ungated	28/04/2021 06/11/2021 <b>09/11/2021</b>	3.2,3.7,3.9,3.10,3.13,3.21,3.22	07
110	Yermala	1997	75°52'00" 18°23'00"	15.72	1.41	133.73	MH09MH1459	Ungated	28/04/2021 06/11/2021	3.9,3.13,3.10	03
111	Malkapur (ST)	1995	75°59'00" 18°28'00"	22.80	0.945	84.52	MH09MH1375	Ungated	28/04/2021 06/11/2021	3.2,3.6,3.13	03
112	Arsoli LMI Tank	1990	75°28'00" 18°19'00"	23.30	7.718	976	MH09MH1246	Ungated	22/04/2021 07/11/2021	3.9, 3.13, 3.20,3.6	04
113	Jamb	2000	75°34'00" 18°31'00"	17.30	2.824	302.71	MH09MH1539	Ungated	22/04/2021 07/11/2021 <b>09/11/2021</b>	3.2,3.7,3.9,3.13,3.22	05

Sr.	Name of	Year	Location	Height	Gross	Design	Sr.No. in	Gated /	Date of	Deficiencies noticed	Total
No	Dam	of Compl	Longitude	in m	Capacity Mm <sup>3</sup>	Spillway	NRLD Register	Ungated	Inspection		Deficien
		-etion	/ Latitude		WIIII	$m^3 / sec$	Register				cies
1	2	3	4	5	6	7	8	9	10	11	12
114	Wakwad	1996	75°42'00" 18°33'10"	16.80	0.998	163	MH09MH1390	Ungated	22/04/2021 07/11/2021	3.9, 3.2, 3.13, 3.19, 3.20, 3.21, 3.34	07
115	Watephal	2000	75°24'45" 18°28'10"	15.06	4.266	628.21	MH09MH1545	Ungated	26/04/2021 25/11/2021	3.2,3.13,3.21,3.22	04
116	Tintraj	1985	75°31'00" 18°36'00"	15.55	1.393	429.76	MH09MH093	Ungated	22/04/2021 07/11/2021	3.9,3.13,3.34	03
117	Chorkhali	1996	$\begin{array}{c} 75^{0} \ 54' \ 00'' \\ 18^{0} \ 20' \ 00'' \end{array}$	20.28	3.434	291	MH09MH1363	Ungated	28/04/2021 06/11/2021	3.10,3.13,3.22,3.2	04
118	Banganga	1975	75°40'00" 18°29'00"	19.20	5.935	826	MH09MH0522	Ungated	22/04/2021 18/11/2021	3.5,3.7,3.9,3.13,3.20,3.21	06
119	Khasapur	1956	75°30'00" 18°17'00"	23.78	13.590	906	MH09MH0076	Ungated	10/05/2021 25/11/2021	3.1,3.7,3.13,3.20,3.21	05
4)Exe	ecutive Engine	eer, Osma	nabad Irriga	tion Divi	sion 2, Om	erga					
120	Diggi	1997	76°41'10" 17°03'10"	15.16	1.598	201.61	MH09MH1429	Ungated	20/05/2021 08/11/2021	3.2,3.5,3.7,3.13,3.21,3.34,3.16	07
121	Kurnoor	1968	75°16'00" 17°50'00"	23.70	35.24	2190	MH09MH0169	Ungated	11/05/2021 12/11/2021	3.7,3.9,3.13,3.22,3.21	05
122	Turori	1983	76°41'30" 17°48'00"	17.50	7.66	1096	MH09MH1004	Ungated	20/05/2021 08/11/2021	3.2,3.5,3.9,3.13,3.21,3.34	06
123	Harni	1965	76°06'00" 17°49'00"	16.55	13.58	1647	MH09MH0112	Ungated	11/05/2021 12/11/2021 <b>10/11/2021</b>	3.1,3.6,3.9,3.10,3.19,3.22,3.34, 3.20	08
124	Sindgaon	1997	76°08'00" 17°50'00"	16.3	3.282	318	MH09MH1631	Ungated	13/05/2021 17/11/2021	3.2,3.1,3.7,3.9,3.13,3.21	06
125	Khandala	1973	76°10'00" 17°47'00"	20.50	6.26	978	MH09MH0381	Ungated	11/05/2021 18/11/2021	3.1,3.2,3.5,3.9,3.13,3.34	06
126	Nandgaon	1998	75°40'00" 18°25'00"	22.91	1.99	565	MH09MH1469	Ungated	13/05/2021 18/11/2021	3.1,3.2,3.5,3.7,3.9,3.13	06
127	Kunsawali	1998	74º50'00'' 18º45'00''	15.04	1.165	113.08	MH09MH0107	Ungated	13/05/2021 17/11/2021	3.1,3.9,3.13,3.21,3.22,3.34	06

Sr. No	Name of Dam	Year of	Location Longitude	Height in m	Gross Capacity	Design Spillway	Sr.No. in NRLD	Gated / Ungated	Date of Inspection	Deficiencies noticed	Total Deficien
		Lomp	/ Latitude		Mm <sup>3</sup>	Capacity $m^3 / sec$	Register				cies
		etion	Latitude								
1	2	3	4	5	6	7	8	9	10	11	12
128	Aliyabad ST	2004	76°50'00'' 17°'00''	19.50	1.709	170.114	MH09MH2423	Ungated	17/05/2021 12/11/2021 <b>10/11/2021</b>	3.1,3.2,3.5,3.7,3.9,3.13,3.21	07
129	Salgara (D) ST	2000	76º0'00'' 18º'00''	15.30	2.043	537.47	MH09MH2424	Ungated	19/05/2021 10/11/2021 <b>10/11/2021</b>	3.1,3.2,3.5,3.9,3.13,3.16,3.21	07
130	Chikundra ST	2006	76°25" 17°20"	16.70	1.257	125.43	MH09MH2425	Ungated	19/05/2021 10/11/2021 <b>10/11/2021</b>	3.1,3.2,3.5,3.7,3.9,3.13,3.22	07
131	Jalkot ST	1999	76°'00'' 17°'00''	15.30	1.850	416.55	MH09MH2426	Ungated	17/05/2021 18/11/2021 <b>10/11/2021</b>	3.1,3.2,3.5,3.7,3.9,3.13	06
132	Achler ST	1999		15.72	1.296	159.02	MH09LH0702	Ungated	17/05/2021 17/11/2021	3.2,3.5,3.7,3.9,3.13,3.16,3.21, 3.34	08
133	Kesarjawalga	1997	$\begin{array}{c} 74^{0} \ 30' \ 00'' \\ 17^{0} \ 30' \ 00'' \end{array}$	17.72	1.245	207	MH09MH1430	Ungated	17/05/2021 17/11/2021	3.2,3.5,3.7,3.9,3.13,3.34	06
III) S	uperintending	Enginee	r & Adminis	trator, CA	DA, Beed	•	·	•	-		
1) Ex	ecutive Engine	er, Jayak	wadi Irrigati	on Divisi	on NO. 3	Beed					
134	Belpara	1993	75°09'30" 19°09'30"	17.40	6.99	1278	MH09MH1314	Ungated	07/04/2021 22/11/2021 <b>22/11/2021</b>	3.22, 3.2	02
135	Shivani	1978	75°50'30" 18°56'00"	17.14	2.68	462	MH09MH0719	Ungated	03/04/2021 13/11/2021	3.7,3.2,3.9,3.13,3.34,3.21,3.16,3.2 2,	08
136	Nagthalwadi	1981	75°56'00" 19°00'15"	15.81	0.82	288	MH09MH0872	Ungated	17/04/2021 13/12/2021	3.5,3.9,3.2,3.7,3.22,3.20,3.28	07
137	Warni	1981	75°23'00" 19°03'30"	15.34	1.92	445	MH09MH0887	Ungated	13/04/2021 04/12/2021	3.9	01
138	Karchundi	2007	75□ 41'20" 18□ 53'27"	20.75	2.90	552	MH09MH2081	Ungated	04/04/2021 02/12/2021	3.9,3.2	02

Sr. No	Name of Dam	Year of Comp 1- etion	Location Longitude / Latitude	Height in m	Gross Capacity Mm <sup>3</sup>	Design Spillway Capacity m <sup>3</sup> / sec	Sr.No. in NRLD Register	Gated / Ungated	Date of Inspection	Deficiencies noticed	Total Deficien cies
1	2	3	4	5	6	7	8	9	10	11	12
139	Nimgaon Choba	2000	75□ 30'00" 18□ 36'00"	14.67	7.51	2329	MH09MH1557	Ungated	18/04/2021 16/12/2021 <b>11/11/2021</b>	3.7,3.13,3.22,3.34,3.21,3.28	06
140	Suleman Deola	2006	75°1'40" 13°0'30"	19.41	2.280	NA	MH09MH2290	Ungated	12/04/2021 06/12/2021	3.9, 3.2,3.28	03
141	Khatkali	1978	75°45'45" 18°52'45"	18.90	2.27	372	MH09MH0710	Ungated	03/04/2021 02/12/2021	3.7, 3.2, 3.22, 3.34, 3.20	05
142	Mahasangavi	1965	75°28'00" 18°48'00"	16.98	9.45	136	MH09MH0103	Ungated	07/04/2021 09/12/2021	3.22,3.34,3.28,3.16	04
143	Mankarnika	1997	75°58'50" 19°05'00"	15.25	11.38	1321.04	MH09MH1447	Ungated	03/04/2021 7/12/2021 <b>22/11/2021</b>	3.5, 3.7, 3.9, 3.22, 3.34, 3.20, 3.16	07
144	Narayangad	1995	75°45'00" 19°05'30"	16.57	5.286	1044	MH09MH1377	Ungated	13/04/2021 04/12/2021	3.7, 3.9, 3.13, 3.3.22, 3.21, 3.34	06
145	Uthala	1992	75°52'00" 19°06'00"	16.28	8.17	1041	MH09MH1296	Ungated	13/04/2021 04/12/2021	3.7, 3.2, 3.22	03
146	Kadi	1970	75°05'24" 18°58'30"	21.18	7.633	1156	MH09MH0225	Ungated	10/04/2021 01/12/2021	3.34,3.20	02
147	Kambli	1958	75°30'00" 18°16'00"	15.20	3.80	1359	MH09MH0079	Ungated	10/04/2021 06/12/2021	3.1,3.9,3.10,3.2,3.22,3.21,3.32,3.1 6	08
148	Mehakari	1966	75°00'00" 18°52'00"	27.63	16.135	2233	MH09MH0132	Ungated	10/04/2021 01/12/2021 11/11/2021	3.5, 3.2, 3.22, 3.20, 3.28	05
149	Rameshwar Sautada	2000	75°18'42" 18°48'45"	17.50	3.28	896	MH09MH1550	Ungated	18/04/2021 09/12/2021	3.2,3.13,3.28	03
150	Welturi	1979	75°02'30" 15°04'00"	20.50	1.78	435	MH09MH0783	Ungated	17/04/2021 13/12/2021	3.9, 3.2, 3.22, 3.21, 3.28, 3.16	06
151	Matkuli	1989	75°15'30" 18°47'15"	15.39	1.758	447.54	MH09MH1436	Ungated	18/04/2021 16/12/2021	3.2,3.7,3.9,3.13,3.22,3.20,3.16	07
152	Wanjarwadi	1961	75°38'00" 18°58'00"	15.03	2.89	1867	MH09MH0087	Ungated	04/04/2021 03/12/2021	3.2, 3.9, 3.13, 3.34, 3.21, 3.16	06

Sr. No	Name of Dam	Year of Comp 1- etion	Location Longitude / Latitude	Height in m	Gross Capacity Mm <sup>3</sup>	Design Spillway Capacity m <sup>3</sup> / sec	Sr.No. in NRLD Register	Gated / Ungated	Date of Inspection	Deficiencies noticed	Total Deficien cies
1	2	3	4	5	6	7	8	9	10	11	12
153	Golangiri	1987	75°38'00" 18°44'100"	15.52	1.893	436	MH09MH1162	Ungated	01/04/2021 02/12/2021	3.7, 3.2, 3.3.13,3.9,3.22,3.34,3.20	07
154	Incharna	1971	75°07'00" 18°12'00"	15.29	2.63	527	MH09MH0262	Ungated	18/04/2021 09/12/2021	3.2, 3.10, 3.22, 3.19	04
155	Dokewada (ST)	1976	75°44'30" 18°55'30"	23.20	8.92	1136	MH09MH2074	Ungated	03/04/2021 22/11/2021	3.9,3.2,3.13,3.34,3.21	05
156	Bhayala-II	2007	75°37'07" 18°32'08"	26.70	1.84	379.48	MH09MH2068	Ungated	21/04/2021 09/12/2021	3.9, 3.2, 3.13, 3.16, 3.28, 3.6	06
157	Morzalwadi	1993	77°25'18" 18°56'29"	15.70	1.473	530	MH09MH1295	Ungated	21/04/2021 04/12/2021	3.9,3.7,3.13,3.34,3.16	05
158	Sindphana	1963	75°23'00" 19°00'00"	19.05	12.593	1857	MH09MH0092	Ungated	07/04/2021 22/11/2021	3.22,	01
159	Bindusara	1955	75°44'30" 18°45'45"	18.00	9.57	1654	MH09MH0072	Ungated	03/04/2021 13/11/2021	3.5, 3.13, 3.21, 3.16	04
160	Rooty	1958	75°30'00" 18°16'16"	15.20	3.80	1359	MH09MH0055	Ungated	10/04/2021 01/11/2021 11/11/2021	3.9,3.13,3.16	03
161	Lokarwadi	2001	75°54'00" 18°54'00"	23.91	2.23	341	MH09MH2280	Ungated	03/04/2021 07/12/2021	3.1,3.2,3.7,3.13,3.22,3.34,3.21,3.1 6	08
162	Domri	1996	75° 34'00" 18° 54'00"	23.10	11.21	1243	MH09MH1409	Ungated	04/04/2021 03/12/2021	3.2,3.22	02
163	Kada	1965	75° 26' 00'' 18° 56'00''	15.45	9.95	1554	MH09MH0111	Ungated	10/04/2021 01/12/2021	3.7,3.34,3.22,3.20,3.16	05
164	Brahmagaon	1978	75° 11'30" 18° 48'00"	15.80	1.66	384.50	MH09MH0708	Ungated	17/04/2021 16/12/2021	3.9,3.2,3.13,3.22	04
2) Ex	ecutive Engine	er, Maja	lgaon irrigati	ion Divisi	ion, Parali(	V),Beed				-	-
165	Bhodegaon	1971	76°20'00" 19°30'00"	17.10	4.24	751	MH09MH0265	Ungated	20/04/2021 02/11/2021	3.13,3.22,3.34	03
166	Daithana	2002	76°39'57" 18°48'10"	16.99	1.65	270	MH09MH1603	Ungated	28/04/2021 18/11/2021	3.2	01

Sr. No	Name of Dam	Year of Comp 1- etion	Location Longitude / Latitude	Height in m	Gross Capacity Mm <sup>3</sup>	Design Spillway Capacity m <sup>3</sup> / sec	Sr.No. in NRLD Register	Gated / Ungated	Date of Inspection	Deficiencies noticed	Total Deficien cies
1	2	3	4	5	6	7	8	9	10	11	12
167	Borna	1983	76°36'30" 18°15'30"	22.30	10.908	1249	MH09MH1005	Ungated	28/04/2021 28/04/2021	3.5,3.9,3.13,3.22,3.34,3.21, 3.16	07
168	Chandpur	1969	76 <sup>°</sup> 33' 00" 18 <sup>°</sup> 48' 00"	23.89	3.01	412	MH09MH0186	Ungated	28/04/2021 18/11/2021	3.13,3.9,3.34,3.19,3.5,3.16	07
169	Karewadi	1978	75°30'00" 18°48'00"	22.96	1.58	403	MH09MH0714	Ungated	28/04/2021 01/11/2021	3.35,3.1,3.2,3.13,3.34,3.20	06
170	Kanherwadi	1978	76°30'00" 18°48'00"	18.04	3.29	403.22	MH09MH0713	Ungated	28/04/2021 19/11/2021	3.5, 3.9, 3.13, 3.19, 3.16, 3.34	06
171	Kalwati	2001	76°24'00" 18°48'00"	16.98	4.95	136	MH09MH1571	Ungated	30/04/2021 24/11/2021	3.7,3.9,3.2,3.13,3.16	05
172	Nilkanteshwar	2001	76°19'36" 18°16'25"	19.08	1.96	1.96	MH09MH1596	Ungated	21/04/2021 15/11/2021	3.7,3.2,3.13,3.22,3.34,3.21, 3.35,3.16	08
173	Jiwachwadi	2005	76°00'45" 18°05'20"	20.35	1.41	199.95	MH09MH2275	Ungated	29/04/2021 11/11/2021	3.7,3.2,3.9,3.13	04
174	Limbachiwadi- I	2005	76 <sup>0</sup> 5' 2 18 <sup>0</sup> 50' 58''	20.08	1.414	273	MH09MH2087	Ungated	03/04/2021 30/11/2021	3.5,3.9,3.13,3.16	04
175	Limbachiwadi- 2	2006	76°06'03" 18°04'41"	17.95	1.40	661.50	MH09MH2088	Ungated	03/04/2021 30/11/2021	3.9,3.13,3.16	03
176	Dethewadi	2005	75°58'51" 18°52'48"	21.88	1.409	236.80	MH09MH1649	Ungated	03/04/2021 13/11/2021	3.7, 3.9,3.13,3.2	04
177	Chardari	2000	76°02'30" 18°52'30"	22.82	1.51	417.64	MH09MH1583	Ungated	29/04/2021 10/11/2021	3.5,3.9,3.2,3.13	04
178	Dharur (ST)	1981	75°05'31" 18°49'05"	20.24	1.49	185.44	MH09MH1573	Ungated	29/04/2021 11/11/2021 23/11/2021	3.9,3.13,3.7	03
179	Ghagarwada	2005	76°54' 00" 18°50' 48"	25.35	2.78	385.35	MH09MH1592	Ungated	03/04/2021 13/11/2021	3.2,3.7,3.9,3.13,3.19,3.16	06
180	Chanai	2006	76°19'09" 18°44'47"	16.48	0.603	64	MH09MH1661	Ungated	30/04/2021 16/11/2021	3.13,3.5,3.7,3.9,3.2	05
181	Bhavathana	2005	76°17'29" 18°48'33"	25.76	5.27	553	MH09MH1653	Ungated	30/04/2021 17/11/2021	3.7,3.2,3.9,3.13,3.19,3.16	06

Sr.	Name of	Year	Location	Height	Gross	Design	Sr.No. in	Gated /	Date of	Deficiencies noticed	Total
No	Dam	of	Longitude	in m	Capacity	Spillway	NRLD	Ungated	Inspection		Deficien
		Comp	/ Latituda		Mm <sup>3</sup>	Capacity	Register				cies
		etion	Latitude			III <sup>3</sup> / Sec					
1	2	3	4	5	6	7	8	9	10	11	12
182	Sakud	2001	$76^{\circ} 27' 00''$	16.48	0.603	64	MH09MH1661	Ungated	30/04/2021	3.7,3.9,3.2,3.13,3.16	05
183	Kasari	1088	18° 44° 47″ 750 04' 30"	15.52	0.872	142.80	MH00MH0854	Upgated	1//11/2021	3730313322	04
105	Kasan	1900	$18^{\circ} 45' 00''$	15.52	0.072	142.00	1011109101110054	Ongated	10/11/2021	5.7,,5.9,5.15,5.22,	04
184	Karanja	2002	76°39'57"	16.99	1.65	270	MH09MH0249	Ungated	16/04/2021	3.2, 3.13,3.19	03
	,		18°48'10"					~	10/11/2021		
185	Chikalbeed	2005	76°17'29" 18°48'33"	25.76	5.27	553	MH09MH1653	Ungated	03/04/2021 12/11/2021	3.2,3.13,3.9,3.20	04
186	Wan	1966	76°25'00"	19.00	2.51	2340	MH09MH0133	Ungated	20/04/2021	3.5,3.9,3.7,3.10,3.13,3.20,3.35	07
			18°52'00"						23/11/2021		
187	Babulgaon	1975	76°13'00" 18°59'00"	15.60	2.74	340	MH09MH0774	Ungated	29/04/2021 01/11/2021	3.7,3.9,3.2,3.13,3.34,3.20,3.21	07
188	Bhogalwadi	2002	76° 10' 00"	16.68	1.94	493.38	MH09MH1370	Ungated	29/04/2021	3.13,3.9,3.2,3.34,3.22,3.1	06
			$18^{\circ} 16' 00"$						03/11/2021		
									23/11/2021		
189	Gunwati	1995	76°20'15" 18°37'15"	15.82	6.616	922.20	MH09MH1364	Ungated	29/04/2021 08/11/2021	3.7,3.9,3.2,3.13	04
190	Saraswati	1981	76°16'10"	18.30	NA	7.23	MH09MH0865	Ungated	29/04/2021	3.1,3.9,3.13,3.34,3.21	05
			18°35'00"					Ũ	03/11/2021		
191	Kundalika	1981	76°08'00"	28.45	46.34	2751	MH09MH1140	Ungated	16/04/2021	3.13	01
			18°56'30"						02/11/2021		
192	Khanapur	1978	76°21'30"	20.40	2.77	383	MH09MH0712	Ungated	29/04/2021	3.13,3.9,3.34,3.20	04
			19°21'30"						08/11/2021		
B)Ch	ief Engineer, (W	VR), Au	rangabad		_						
1)Sup	erintending En	gineer, l	BIPC, Parali	(V), Bee	d						
I)Exe	cutive Enginee	r, Latur	MID, Latur	40.05		40.4.00			111/05/0001		
193	Ghonshi (MI) tank	1991	18º31' 45"	19.85	1.247	494.08	MH09LH1226	Ungated	11/05/2021 17/11/2021	3.2,3.7,3.9,3.13,3.22,3.35,3.20,3.2 1	08
194	Dongarkonali ST	2015	77°60'00" 18°36'00"	16.24	4.134	1182.77	MH09MH2292	Ungated	11/05/2021 17/11/2021	3.13,3.2,3.16	03

Sr. No	Name of Dam	Year of Comp 1- etion	Location Longitude / Latitude	Height in m	Gross Capacity Mm <sup>3</sup>	Design Spillway Capacity m <sup>3</sup> / sec	Sr.No. in NRLD Register	Gated / Ungated	Date of Inspection	Deficiencies noticed	Total Deficien cies
1	2	3	4	5	6	7	8	9	10	11	12
2)Exe	cutive Enginee	r, Beed	Irrigation D	ivision, B	leed	-		-			_
195	Chanai ST-2	2009	79° <b>51''</b> 18° <b>4</b> 7''	20.65	0.9125		MH09MH2291	Ungated	14/05/2021 NA	3.1,3.9	02
196	Sarfarajpur ST	2011	76°'12'' 18°'11''	17.40	1.2916		MH09MH2300	Ungated	13/05/2021 NA	3.9	01
197	Sakud ST-2	2012	76°'00'' 18°'21''				MH09MH2298	Ungated	11/05/2021 NA	3.1	01
198	Surnerwadi ST	2012	76°30" 18°00"	18.10	1.78	187.28	MH09MH2301	Ungated	14/05/2021 NA	3.1	01
199	Morphali	2010			3.4538	1213.84	MH09MH2294	Ungated	Not mentioned NA	3.1,	01
200	Nandagaul ST	2011	76°'11'' 18°'51''	17.70	1.3028	100.90	MH09MH2295	Ungated	12/05/2021 NA	3.5	01

Sr. No	Name of Dam	Year of Com pl- etio n	Location Longitude / Latitude	Height in m	Gross Capacity Mm <sup>3</sup>	Design Spillway Capacity m <sup>3</sup> /sec	Sr.No. in NRLD Register	Gated / Ungated	Date of Inspection	Deficiencies noticed	Total Deficien cies
1	2	3	4	5	6	7	8	9	10	11	12
II)Su	perintending Er	ngineer	, Aurangaba	d Irrigati	on Circle,	Aurangaba	d				
1)Exe	cutive Engineer	r, Mino	or Irrigation	Division-	1, Auranga	bad	1		1		-
201	Rawala	1999	75°52'00" 20°35'00"	23.50	5.31	468.68	MH09MH1511	Ungated	21/05/2021 NR	3.5,3.1,3.2,3.9,3.13,3.22,3.34, 3.21	08
202	Nimkhedi	2005	75°14'00" 20°29'30"	15.25	1.39	154	MH09MH2095	Ungated	Not mentioned NR	3.2, 3.5, 3.7, 3.21,3.9	05
203	Phulambari	2005	75°20'20" 20°20'00"	17.00	6.11	1019	MH09LH2381	Ungated	Not mentioned NR	3.2	01
204	Halda-Jalki MI Tank	2005	75°37'00" 20°30'00"	16.54	1.377	160.70	MH09MH2293	Ungated	21/05/2021 NR	3.5,3.7,3.2,3.9,3.13,3.22,3.34, 3.21	08
205	Kolwadi MI Tank	1996	75°02'30" 20°5'00"	17.90	2.159	346.68	MH09MH1760	Ungated	Not mentioned NR	3.5	01
206	Pimpalwadi	2001	76°02'00" 20°32'00"	15.75	2.694	288.047	MH09MH2296	Ungated	21/05/2021 NR	3.5,3.7,3.9,3.2,3.13,3.22,3.21, 3.34	08
2)Exe	cutive Engineer	r, Jalna	u Minor Irrig	ation Div	ision, Jalna	ı					
207	Chandai Eco LMI Tank	2006	70°50'00" 20°00'00"	15.05	2.913	465.39	MH09LH1000	Ungated	11/4/2020 NR	3.5,3.1,3.2,3.21	04
208	Banegaon LMI Tank	2006	70°50'00" 20°70'00"	15.50	6.982	974.26	MH09MH2302	Ungated	14/4/2020 NR	3.5,3.1,3.2,3.21	04
209	Palaskheda LMI Tank	NA	75°04'09" 20°05'00"	16.70	9.013	929.09	MH09MH2321	Ungated	14/4/2020 NR	3.5,3.1,3.2,3.21	04
210	Taltondi MI Tank	2007	76°26'00" 19°42'00"	20.18	2.258	23.63	MH09MH2312	Ungated	12/5/2020 NR	3.2	01

Sr. No	Name of Dam	Year of Com pl- etio n	Location Longitude / Latitude	Height in m	Gross Capacity Mm <sup>3</sup>	Design Spillway Capacity m <sup>3</sup> /sec	Sr.No. in NRLD Register	Gated / Ungated	Date of Inspection	Deficiencies noticed	Total Deficien cies
1	2	3	4	5	6	7	8	9	10	11	12
211	Pimpalwadi ST	2010	76°06'57" 19°05'57"	20.59	1.61	419.09	MH09MH2297	Ungated	21/5/2020 NR	3.2,3.13	01
II)Su	perintending Er	ngineer	r, Nanded Ir	rigation (	Circle, Nan	ded					
1)Exe	cutive Engineer	r, Nan	ded Irrigation	n Divisio	n (North),	Nanded	•	1		1	
212	Hudi	1976	$\begin{array}{c} 78^{0} \ 30' \ 00'' \\ 19^{0} \ 21' \ 15'' \end{array}$	15.75	1.622	98	MH09MH0546	Ungated	14/05/2021 12/11/2021	3.5,3.13,3.22,3.21	04
213	Dongargaon	1985	78º09'30'' 19º26'30''	22.60	9.60	729	MH09LH1028	Ungated	14/05/2021 12/11/2021	3.5,3.13,3.22,3.36	04
214	Nagzari (Kinwat)	1984	76º16'00'' 19º36'00''	17.25	1.895	624	MH09MH1057	Ungated	14/05/2021 13/11/2021	3.5,3.7,3.2,3.10,3.20,3.22,3.16	07
215	Warsangvi	1987	78º10'00'' 19º37'15''	15.60	2.537	315	MH09MH2111	Ungated	15/05/2021 13/11/2021	3.2,3.9,3.13,3.22	04
216	Loni	1979	78°10'00" 19°42'30"	21.6	9.217	759	MH09LH0766	Ungated	15/05/2021 13/11/2021	3.2,3.22,3.9,3.20	04
217	Sindgi	1976	78°03'30" 19°42'00"	16.64	1.67	104	MH09MH0547	Ungated	15/05/2021 13/11/2021	3.2,3.1,3.9,3.13,3.6	05
218	Renapur Sudha	1975	77°47'00" 19°20'00"	19.40	1.87	1170	MH09MH1555	Ungated	14/05/2021 13/11/2021	3.5,3.7,3.1,3.2,3.13,3.9,3.21, 3.10	08
219	Nichpur	1978	77°36'00" 19°42'00"	15.56	2.32	168	MH09MH0678	Ungated	15/05/2021 13/11/2021	3.13	01
220	Pimpalgaon (KI)	1976	76°19'00" 19°39'00"	15.75	22.50	143	MH09MH0554	Ungated	14/05/2021 13/11/2021	3.5,3.13,3.6,3.9,3.2	05
221	Jaldhara	1975	78°70'00" 19°24'00"	19.40	1.97	173	MH09MH0537	Ungated	14/05/2021 11/12/2021	3.2,3.13,3.21,3.19,3.6,3.16	06
222	Sirpur	1986	78°18'00" 19°49'15"	28.40	6.05	975	MH09MH1133	Ungated	15/05/2021 13/11/2021	3.7,3.9,3.13	03
223	Palaiguda	1999	78°04'44" 19°04'40"	19.85	5.987	193.10	MH09MH1513	Ungated	15/05/2021 13/11/2021	3.5,3.22,3.13,3.21	04
224	Mandvi	1998	78°16'30" 19°47'00"	21.98	7.07	839.13	MH09LH1038	Ungated	15/05/2021 13/11/2021	3.9,3.13,3.22,	03

Sr.	Name of	Year	Location	Height	Gross	Design	Sr.No. in	Gated /	Date of	Deficiencies noticed	Total
No	Dam	of	Longitude	in m	Capacity	Spillway	NRLD	Ungated	Inspection		Deficien
		Com	/		Mm <sup>3</sup>	Capacity	Register				cies
		pl-	Latitude			m <sup>3</sup> / sec					
		etio									
		n									
1	2	3	4	5	6	7	8	9	10	11	12
2)Exe	ecutive Enginee	r, Nan	ded Irrigatio	n Divisio	n (South),	Nanded		•			
225	Karadkhed	1976	77°29'00"	20.90	12.37	1560	MH09MH0735	Ungated	15/06/2021	3.2,3.1,3.10,3.34,3.21,3.19,3.6,3.16	08
			18°28'30"						09/12/2021		
226	Ghagardara	1986	77°11'36"	19.84	2.812	629	MH09MH2075	Ungated	19/05/2021	3.2,3.7,3.9,3.13,3.20,3.34,3.32	07
			18°45'00"						10/12/2021		
227	Kedarnath	1964	76°16'00"	17.00	6.05	792.75	MH09MH0095	Ungated	11/06/2021	3.2,3.7,3.1,3.13,3.10,3.34,3.6	07
			19°26'00"						07/12/2021		
228	Kudala	1975	77°15'00"	17.50	4.89	875	MH09MH0521	Ungated	06/11/2021	3.10,3.2,3.7,3.9,3.13,3.22,3.34,3.21	10
			18°47'30"						06/12/2021	,3.20,3.6	
229	Kundrala	1969	77°19'30"	18.50	14.68	811	MH09MH0193	Ungated	15/06/2021	3.10, 3.2, 3.9, 3.1, 3.13, 3.34	06
			18°37'45"						09/12/2021		
230	Pethwadaj	1975	79º10'00"	19.40	11.48	1170	MH09MH0841	Ungated	11/06/2021	3.10, 3.13, 3.34	03
			19°29'00"						10/12/2021		
231	Pota	1973	77°36'00"	15.50	15.50	146	MH09MH0332	Ungated	06/11/2021	3.5, 3.10, 3.2, 3.9, 3.13, 3.22, 3.34,	11
			19°26'00"						06/12/2021	3.21,3.1,3.6,3.7	
232	Sayalwadi	1977	77°25'30"	15.50	2.337	NA	MH09MH0764	Ungated	03/06/2021	3.10, 3.2, 3.9, 3.13,	09
			19°21'00"						07/12/2021	3.34,3.21,3.6,3.32,3.16	
233	Pimprala	1968	77°34'30"	15.00	26.32	349	MH09LH0162	Ungated	11/06/2021	3.10,3.34,3.13,3.1,3.7,3.21,	010
	_		19°19'00"						07/12/2021	3.20,3.9,3.6,3.16	
234	Shirur	1977	78°30'00"	16.14	1.78	216	MH09MH066	Ungated	NR	3.7,3.10,3.2,3.9,3.13,3.22,3.6,	07
			19°21'15"					-	10/12/2021		
235	Sonpeth-wadi	1974	77°20'00"	15.10	1.70	274.20	MH09MH0535	Ungated	NR	3.7,3.10,3.2,3.13,3.22,3.34,	08
			18°70'00"						10/12/2021	3.21,3.20	
236	Wazar (ST)	2010	770 24' 24"	25.30	1.22	232.57	MH09MH2113	Ungated	NR		
			$18^{\circ} 20' 00''$						NR		
237	Yedur	2005	$77^{0}$ 18' 00"	18.01	13.160	1744	MH09MH1646	Ungated	15/06/2021	3.9,3.2,3.10,3.13,3.19,3.1	06
			$18^{\circ} 01' 00''$						09/12/2021		

Sr. No	Name of Dam	Year of Com pl- etio n	Location Longitude / Latitude	Height in m	Gross Capacity Mm <sup>3</sup>	Design Spillway Capacity m <sup>3</sup> / sec	Sr.No. in NRLD Register	Gated / Ungated	Date of Inspection	Deficiencies noticed	Total Deficien cies
1	2	3	4	5	6	7	8	9	10	11	12
3)Exe	cutive Engineer	r, Lenc	li Project Div	vision, De	egloor						
238	UndriManjri	2015	77º 17' 00"	19.25	1.71	202.39	MH09MH2110	Ungated	NR		
	(ST)		18° 39' 25"						NR		
239	Jamkhed	2000	77° 29° 00"	16.90	10.23	1075.70	MH09MH1790	Ungated	04/05/2021	3.2, 3.21, 3.13, 3.22	04
	(LMI)		$18^{\circ} 30' 00''$						NR		
4)Exe	cutive Engineer	r, Purn	a Irrigation 1	Division,	Basmatnag	gar					
240	Pedgaon	1975	77°15'00"	10.20	26.16	2395	MH09MH0502	Ungated	01/05/2021	3.9,3.2,3.13,3.22,3.21	05
			19°45'00"						11/12/2021		
241	Aundha	1975	77°12'00"	15.18	1.791	238	MH09MH0491	Ungated	01/06/2021	3.5,3.9,3.2,3.7,3.9,3.13,3.22,	11
			19°32'00"						11/12/2021	3.34,3.21,3.20,3.19	
242	Rajwadi(Basm	2000	77°00'00"	16.60	2.12	191	MH09MH2100	Ungated	01/06/2021	3.2,3.9,3.13,3.22,3.34,3.19	06
	atnagar)		19°30'00"						11/12/2021		
243	Ghordari	1988	76°49'00"	17.12	22.65	323	MH09MH1194	Ungated	01/06/2021	3.5,3.9,3.3.2,3.13,3.22,3.34,	07
			19°51'00"						11/12/2021	3.21	

Sr. No.	Dam Features	Date of Inspection	Inspecting Officer	Main Component of Dam	Significant Deficiencies noticed	Remedial Measures Suggested
1	2	3	4	5	6	7
				NIL		

Table 3.16Private Class-I Dams with Category-1 Deficiency

Table 3.17Private Class-I Dams with Category-2 Deficiency

Sr. No.	Dam Features	Date of Inspection	Inspecting Officer	Main Component of Dam	Significant Deficiencies noticed	Remedial Measures Suggested
1	2	3	4	5	6	7
				NIL		

Table 3.18Private Class-I Dams with Category-3 Deficiency

Sr. No.	Dam Features	Date of Inspection	Inspecting Officer	Main Component of Dam	Significant Deficiencies noticed	Remedial Measures Suggested
1	2	3	4	5	6	7
				NIL		

# Private Class-II Dams with Category-1 Deficiency

Sr. No.	Dam Features	Date of Inspection	Inspecting Officer	Main Component of Dam	Significant Deficiencies noticed	Remedial Measures Suggested
1	2	3	4	5	6	7
				NIL		

# Private Class-II Dams with Category-2 Deficiency

Sr. No.	Dam Features	Date Of Inspection	Inspecting Officer	Main Component Of Dam	Significant Deficiencies Noticed.	Remedial Measures Suggested	
	A) Aurangabad Municipal Co	orporation, Au	rangabad				
1	Name : <b>KHAM ( SANGVI)</b> Date of completion : 1968. Location : Longitude: 75□ 21' 247" Latitude : 19□ 56' 17" Gross Capacity :29.70 Mm3 Height : 10.20 m.	25/11/2021	Shri. P.S.Patare EE, DSD-3, DSO, Nashik.	Embakment	<b>1</b> . At the time of inspection longitudinal cracks along the length of dam are observed. <b>(B4)</b>	Longitudinal cracks should be identified chainagewise along the length of the dam.cracks should be marked,monitired with reference to water level and a crack register as per the following <b>proforma</b> should be maintained for decision making.	
	Design spillway Capacity N.A. m3/sec. Sr No in National Register of Large Dams 2009 :		Dt.of	CRACK REG	STER CRACK REGISTER chainage Dt.of crack no crack nnnnnnoticed from-to	CRACK REGISTER	Crack measu L
	MH09MH0175			Embakment	2. There was ponding of water noticed @ d/s of the dam. (A2)	Find out exact source of ponding water and make necessry arrangements to prevent it.	
2	Name :WOHER ( HARSUL) Date of completion : 1964 Location : Longitude : 75□ 19' 56" Latitude : 19□ 50' 32" Gross Capacity : N.A Mm3 Height : 16.0 m. Design spillway Capacity N.Am3/sec. Sr No in National Register of Large Dams 2009 :	24/11/202	Shri. P.S.Patare EE, DSD-3, DSO, Nashik.	E / Dam.	<b>1</b> . At the time of inspection longitudinal cracks along the length of dam are observed. <b>(B4)</b>	Longitudinal cracks should be identified chainagewise along the length of the dam.cracks should be marked,monitired with reference to water level and a crack register as per the following proforma should be maintained for decision making   CRACK REGISTER   Dt.of chainag Locat Crack   crack e ion.R measurements   noticed /S- L/S L B D	-

МН09МН0101			2.Undulations,water ponding and trespassers with vehicles on dam top are noticed.Dam section is not as per design section.Rain cuts observed.(B1)	Total Station survey of the dam section should be carried out.Dam section (top width,side slopes and drains) should be checked.Surveyed section should be superimposed on design section to ascertain whether earthen embankment is undersection or not.Checking of crest profile is essential to identify the excessive/uneven settlement of the dam.water in pot holes should be drained out.
		D/S drainage and seepage measurement	<ul><li>3. Ponding of water noticed during inspection @ d/s in goege portion.</li><li>(A2)</li></ul>	Nala regradation should be techno economically carried out to drain out the ponded water.

S.,				Main		
Sr. No.	Dam Features	Date Of Inspection	Inspecting Officer	Component Of Dam	Significant Deficiencies Noticed.	Remedial Measures Suggested
E	B) Jalna Municipal Council, J	alna				
3	Name : <b>GHANEWADI</b> Date of completion : 1975. Location : Longitude: 75 51' 03" Latitude : 19 54' 42" Gross Capacity :14.44 Mm3 Height : 16.00 m. Design spillway Capacity N.Am3/sec.	25/11/2021	Shri. P.S.Patare EE, DSD-3, DSO, Nashik.	E / Dam	No documentation regarding checking of crest profile is observed is observed.Dam top was not free from undulation and local depression. (B1)	Total Station survey of the dam section should be carried out.Dam section (top width,side slopes and drains) should be checked.Surveyed section should be superimposed on design section to ascertain whether earthen embankment is undersection or not.Checking of crest profile is essential to identify the excessive/uneven settlement of the dam.
	Sr No in National Register of Large Dams 2009 :				Longitudinal cracks are observed. (B4)	Cracks should be filled with appropriate casing material.
	мн09мн0053			W.W. bar & TC	Ghanewadi project has two waste weirs on both side of embankment.R/s waste weir has damaged at several places.UCR masonary is exposed at several places.(B7)	Waste weir bar/spillway should be repaired immediately in consultation with CDO Nashik.General layout drawing of the project should be made available to DSO,Nashik.
				EDA	EDA,Stilling Basin damaged very badly.(B7)	EDA/Stilling Basin should be repaired immediately in consultation with CDO Nashik.Drawing of EDA/Stilling Basin should be made available DSO Nashik.

Sr. No.	Dam Features	Date Of	Inspecting	Main Component Of Dam	Significant Deficiencies Noticed.	Remedial Measures Suggested
0	) Udgir Municipal Council,	Udgir, Dist. L	atur	Of Duni	<u> </u>	ouggeoteu
4	Name : BANSHELKI	24/11/2021	Shri.	E/Dam	<b>1</b> . At the time of inspection	Longitudinal cracks should be identified
	Date of completion : 1968.		P.S.Patare		longitudinal cracks along the length	chainagewise along the length of the
	Location :		EE, DSD-3,		of dam are observed. <b>(B4)</b>	dam.cracks should be marked,monitired
	Longitude: 77 0 05' 32"		DSO, Nashik.			with reference to water level and a crack
	Latitude: 18 21' 53"					register as per the following proforma
	Gross Capacity :NA Mm3					should be maintained for decision making.
	Height : 23.00 m.					
	Design spillway Capacity			W.W.bar & TC	On both sides of west weir	Vegetation (trees)should be removed
	N.Am3/sec.				bar, heavy vegetation is noticed. (B7)	immediately.
	Sr.No.in National Register of					·
	Large Dams 2009 : NA					

# Private Class-II Dams with Category-3 Deficiency

Sr.	Name of	Date of	Location	Height	Gross	Design	Sr.No. in	Gated /	Date of	Deficiencies noticed	Total
No	Dam	Compl-	Longitude/	in m	Capacity	Spillway	NRLD	Ungated	Inspection		Deficienci
		etion	Latitude		Mm <sup>3</sup>	Capacity	Register of	_			es
						$m^3/sec$	Large Dams				
							2009				
1	2	3	4	5	6	7	8	9	10	11	12
(1)	AURANGABAD	MUNIC	IPAL CORPO	RATION,	AURANGA	ABAD					•
1	KHAM	1968	75 21'24"	21.00	2.97		MH09MH017	Ungated	25/11/2021	3.1, 3.2, 3.3,	15
	(SANGVI)		19D 56' 17"				5			3.5,3.7,3.9,3.13,3.21,3.24,3.2	
										5,	
										3.26,3.27, 3.29,3.30,3.34	
2	WOHER	1964	75 19' 56"	16.00			MH09MH010	Ungated	24/11/2021	3.1, 3.2, 3.3, 3.4, 3.5, 3.7, 3.9,	11
	(HARSUL)		19D 50' 32				1			3.16,3.21,3.24, 3.30,	
(2)	JALNA NAGAR	PARISH	AD, JALNA								
3	GHANEWAD	1975	75 51' 03"	15.00	14.44	231	MH09MH005	Ungated	25/11/2021	3.1, 3.2,	10
	Ι		19 54' 42"				3	_		3.3,3.7,3.9,3.20,3.24,3.25,3.2	
										7, 3.30	
(3)	UDGIR NAGAE	R PARISH	IAD, UDGIR I	DIST. LA	ГUR						
4	BANSHELKI	1968	77 05' 32"	23.00			Proposed to	Ungated	24/11/2021	3.1, 3.3, 3.2, 3.4, 3.5, 3.7, 3.13	12
			18 21' 53"				be included in			,3.21, 3.26, 3.27, 3.29, 3.30	
							NRLD				

Table 3	.22
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# Category-1 Deficiency in Class-I Dams

Sr. No	Deficiency	Names of dams	Total No. of dams
1	2	3	4
	NIL	3	4

### Category-2 Deficiency in Class-I Dams

Sr. No	Deficiency	Names of dams	Total No. of dams
1	A.1: Boil leakage/ seepage/ wet patches/ slushiness, in Earthen Dam.	1) Yeldari 2)ShivnaTakli	02
2	A 2: Standing pool / Ponding / Water Logging / Slushy condition on D/S of Dam	1) Siddheshwar	01
3	A 3 : Leakages in vicinity of junction between earthen dam & masonry dam portion.		
4	A 4 : Major leakages through outlet conduit/pipe joints/Gates		
5	A 5; Relief wells not functioning properly./ Abnormal rise in water level in wells.	1) Yeldari	01
6	A 7 : Retrogression / scouring in tail channel.	1) Lower Manar	01
7	<b>A 8</b> : Drainage gallery in accessible/No adequate lighting./ No dewatering arrangement or failure.		
8	A 10 : Heavy leakages through porous pipes/ through dam body in gallery /monolith joints.	1) ShivnaTakli	01
9	A 11 : Sweating / seepages through D/S of masonry dam	1) Yeldari 2)ShivnaTakli	02
10	A 12 : Excessive considerable leaching from seepage water.	1) Manjra 2) ShivnaTakli	02
11	A 13 : Swelling / minor cracking observed on body of dam		
12	A 14 : EDA / Stilling basin damaged/Hydraulic performance not good		
13	A 15 : Leakages through spillway /piers//junction of flank wall.	1) Manjra	01
14	A 18 :Wire ropes of hoist not in good condition/hoisting structure damaged/cracked.	1) Manjara 2) Siddheshwar	02
15	A 19 : Alternative power system Generator for gate operation not working properly.		
16	<b>B 5 :</b> Outlet gates not functioning properly. Stem rod is bent(Service gate/Emergency gate/Stop log gate/sluice gate)	1) ShivnaTakli 2) Manjra	02
17	B 12 : Damage to Rubber seals/Leakages through gates.	1) ShivnaTakli	01

Table 3	3.24
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Sr. No	Deficiency	Names of dams	Total No. of dams
1	2	3	4
		NIL	

### Category-2 Deficiency in Class-II Dams

Sr. No	Deficiency	Names of dams	Total no of dams
1	2	3	4
1	A.1: Boil leakage/ seepage/ wet patches/ slushiness, in Earthen Dam.	1) Daithana 2) Ghonshi 3)Kasari	03
2	A 2: Standing pool / Ponding / Water Logging / Slushy condition on D/S of Dam	1) Daithana	01
3	A 3 : Leakages in vicinity of junction between earthen dam & masonry dam portion.	1) Domri 2) Dethewadi	02
4	A 4 : Major leakages through outlet conduit/pipe joints/Gates		
5	A 5; Relief wells not functioning properly./ Abnormal rise in water level in wells.	1)Dhamna 2) Jui 3)Kalyan Pir	03
6	A 6 : Outlet well is damaged/not in good condition /cracks observed/jets of water in well.	1) Chandni 2) Palaiguda	02
7	A 7 : Retrogression / scouring in tail channel.	1) Halad wadona 2) Limbachiwadi23) Andhori 4) Tintraj	04
8	A 14 : EDA / Stilling basin damaged/Hydraulic performance not good	1) Anandwadi 2) Soyegaon 3	02
9	A 16 : Damages / foundation erosion/ scour/undermining observed in vicinity of flank walls/ guide walls/ junction walls/return walls	1) Halad wadona 2) Dongargaon (ST) 3) Andhori 4)Limbachiwadi2	04
10	<b>B</b> 1 Dam section is not as per design	1) Dhamna 2) Kalyan Girija 2) Chandni 3) Ghonshi 4) Jui 5)Yedur (ST)	05
11	<b>B 3</b> : Considerable settlement of embankment / Rock toe/Pitching/ U/S & D/S slops, bulging/concavity of slopes	1) Khandeshwar 2) Kalyan Pir 3) Andhori 4)Dhamna 5)Kalyan Girija 6)Tiru7)Chandni 8)Palaiguda 9)Ghonshi	09
12	<b>B</b> 4: Longitudinal / Transverse cracks/ low area/sink holes/gully formation on top side slope of earthen dam	1) Tiru 2)Khandeshwar3)Kalyan Pir	03
13	<b>B 5 :</b> Outlet gates not functioning properly. Stem rod is bent(Service gate/Emergency gate/Stop log gate/sluice gate)	1) Ghonshi2)Kalyan Girija 3)Soyegaon 4)Tiru 5)Tintraj6)Chandni 7)Domri 8)Kasari 9)Daithana 10)Donargaon 11)Palaiguda	11
14	<b>B</b> 7: Waste weir/waste weir bar not in good condition/coping damaged/leakage through waste weir	1) Ghonshi 2) Dhamna 3)Halad wadona4) Tintraj 5)Donargaon6)Sonpethwadi 7) Yedur (ST)8)Kalyan Pir 9)Jui 10)Dongargaon (ST)11)Khandeshwar	11
15	<b>B 8</b> : Pointing on U/S face of dam not in good condition./deterioration spalling of concrete surface.	1)Tintraj 2) Yedur (ST)	02
16	B 12 : Damage to Rubber seals/Leakages through gates.		

### Annexure - 1





DSO-ADHSR-2021-22/ MARATHWADA




## 5. Category-2 Deficiencies in Class-I Dams

- A.1: Boil leakage/ seepage/ wet patches/ slushiness,in Earthen Dam.
- A 2: Standing pool / Ponding / Water Logging / Slushy condition on D/S of Dam
- A 4 : Major leakages through outlet conduit/pipe joints/Gates
- A 5 ; Relief wells not functioning properly./ Abnormal rise in water level in wells.
- A 7 : Retrogression /scouring in tail channel.
- A 8 : Drainage gallery in accessible/No adequate lighting./ No dewatering arrangement or failure.
- A 11 : Sweating / seepages through D/S of masonry dam
- A 12 : Excesssive considerable leaching from seepage water.
- A 15 : Leakages through spillway /piers//junction of flank wall.



## 6. Category-2 deficiencies in Class-II dams

- A.1: Boil leakage/ seepage/ wet patches/ slushiness, in Earthen Dam.
- A 2: Standing pool / Ponding / Water Logging / Slushy condition on D/S of Dam
- A 3 : Leakages in vicinity of junction between earthen dam & masonry dam portion.
- A 5 ; Relief wells not functioning properly./ Abnormal rise in water level in wells.
- A 6 : Outlet well is damaged/not in good condition /cracks observed/jets of water in well.
- A 7 : Retrogression /scouring in tail channel.
- A 14 : EDA / Stilling basin damaged/Hydraulic performance not good
- A 16 : Damages / foundation erosion/ scour/undermining observed in vicinity of flank walls/ guide walls/ junction walls/return walls. B 1 Dam section is not as per design
- B 3 : Considerable settlement of embankment / Rock toe/Pitching/ U/S & D/S slops, bulging/concavity of
- slopes B 4: Longitudinal / Transverse cracks/ low area/sink holes/gully formation on top side slope of earthen dam





Annexure-2 Snapshots of Dams inspected by DSO



Snapshot -1

Wadgi Dam (Class-II) Taluka - Washi Dist - Osmanabad Date of Inspection – 09/08/2021 Waste weir bar severe damaged needs to be reconstructed (B7)



Snapshot- 2

Lower Terna Dam (Class-I) Taluka – Lohara Dist - Osmanabad Date of Inspection – 15/12/2021 Leakage through joint of pier anf NOF. (A11)

## Part-4

# Annual Performance Report of Dam Instruments

## PART – 4 Annual performance Report of Instruments installed on large dams

## 4.1 General.

The main purpose of instrumentation in dam is to monitor the safety of the dam and to warn of any changes that could in danger the safety of a dam, as well as to provide a confirmatory check in design assumptions and methods of computation.

Instruments embedded in or installed at the surface of the dam keeps a constant watch over the performance and indicate the distress spots for which remedial measures may be taken. Thus, instruments play an important role in checking the safety of dams and helps in monitoring and evaluating the performance of the dams during the construction as well as during the operation.

Instruments installed on dams are "Eyes and Ears" of dam's performance vis-à-vis parameters adopted during its design. The field officers in charge of dams have not been able to upkeep and monitor/maintain instruments installed on dams. Efforts should be taken by all field officers to repair / replace instruments at the earliest. Monitoring of vital parameters like seepage, uplift, settlement and timely remedial measures will go long way in extending the life of the dam.

## 4.2 INSTRUMENTATION IN EARTHEN DAMS

Commonly used instrument in earthen dam are as below.

### 1) Pore Pressure Meter

They are installed in bore holes drilled below the foundation or through already completed embankment. Hence cannot be repaired or replaced.

## 2) Casagrande/standpipe piezometers

These are used for measuring pore water pressure in soil. These instruments can be installed at any time after completion of construction of the dam at desired location.

## 3) Twin Tube Piezometers

These are also used for measuring pore water pressure in earthen dam. These are installed in foundation and embankment during construction of dam. If PVC pipes are found chocked due to leached material then it can be cleaned with CuSo4. If pipes are cut / broken then it cannot be replaced as those are in body of dam. Outside measuring assembly can be repaired. Periodical maintenance, periodical reading and periodical calibration are utmost important.

### 4) Earth pressure cells

These are installed in the foundation. The cables which are outside the body can be replaced if damaged. The sensor cannot be repaired or replaced.

### 5) Settlement Gauges (surface settlement gauges/vertical cross arms)

These are used for measuring settlement in earth fill dam, rock fill dam and high embankment. Initially when the dam is under construction these instruments are installed.

Settlement of dam is more in initial period, which gradually decreases and it is almost nil after certain period. As such these gauges also do not show settlement after few years.

### 6) Slope Indicator

This is installed in foundation with one end at bottom and other at top of the dam. It measures horizontal and vertical movement of the dam. This can be replaced.

## 4.3 INSTRUMENTATION IN CONCRETE / MASONARY DAM

Commonly used instruments in concrete / masonry dams are as below.

### 1) Stress meters

The stress meters measure stresses inside the dam body. These instruments are embedded in concrete/masonry during construction stage hence cannot be repaired or replaced.

### 2) Strain meter/ No stress strain meter

The strain meters measures the deformation in the structure at the particular location due to strain, creep, temperature etc. The main purpose is to determine the stress distribution in the concrete dam during and after construction of dam. Since instrument is installed in the body of the dam it cannot be repaired or replaced.

### 3) Uplift pressure cells

The bowl type uplift pressure cells are provided in the foundation of dam. Uplift pressure cell is used for monitoring uplift pressure of water in the foundation of dam and concrete structure. The pressure cell pipes can be cleaned if choked. The pressure gauges can be repaired or replaced.

### 4) Plumb bob /Co-ordimeter

Conventional/inverted plumb bob is used to measure deflection of the dam body. It measures the horizontal displacement in dam's foundation and abutment. Plumb bob can be repaired or replaced.

### 5) Thermocouples/ Thermometers

These are used to measure the temperature variations in the body of concrete dam. These are installed in layers at various levels and cannot be replaced or repaired after construction.

#### 6) Long gauge extensometer

It is used to measure the deformation/displacement in the foundation of the concrete dam. Once it fails to function can not be repaired.

## 7) Joint meters

The joint meters measure the opening of the joints across which they are embedded. As such they are located near the joints.

## 4.4 STATUS OF DAM INSTRUMENTATION IN THE REGION

Considering the fact that most of the instruments were non-functional from many years, Govt.of Maharashtra appointed a committee to study these instruments. The recommendations of the committee were accepted and incorporated in G.R. धमुसं २०१४(६२१/१४)/ सिं.व्य.(कामे) dated 31.12.2015. Accordingly to every dam owner, it is informed by Dam Safety Organisation to update the list of instruments at the dam site. In this report the updated details of instruments are considered.

The status of dam instrumentation in the region is given in table No,4.1.Similarly the details of mortality of instruments is given in table No.4.2 and comparison of mortality rate with respect to previous year is given in table no. 4.3

## 4.5 Observations

- 1) Various instruments numbering 337 have been installed on these 6 dams. Out of which 21 were working and 316 were not working i.e. 91.14% instruments are in non working condition.
- 2) No instrument readings from any dam were available for analysis. No Instrumentation data analysis report have been prepared for Marathwada region
- The observations of the instruments should be taken regularly. Data should be sent to D.S.O. Nashik for analysis.
- 4) Comparison of mortality rate of instrument as compared to last year is given as per table No.4.3.

				Laige	Functio (F/	nal Status 'N.F)	Remarks from	
Sr. No.	Dam Name	Instrument Name	Date of Installation	Total	Functional	Non Functional	pre-post Monsoon report 2020	
1	2	3	4	5	6	7	8	
Chief Engineer (W.R), Aurangabad								
1	Yeldari	Twin tube piezometers	1968	26	0	26	Not Provided	
		Twin tube piezometers	81-82	18	0	18		
2	Isapur	Stand pipe piezometers	84-85	14	0	14	Not Provided	
3	Manar (Lower)	Twin tube piezometers		18	18			
	CE	Wise Total 3 Dams	I	77	0	59		
Chie	f Engineer &	Adm.(C.A.D.A), Aura	angabad		I	•		
		Twin tube Biezometers	1972 1971	57	0	57		
	Paithan	Cassagrande piezometer	1981	21	00	21		
4		Vertical settlement gauge + base plate	1973	2	2	0		
		Uplift pressure cell	1979 1979	39	0	39		
		Plumb bob	1980	1	0	1		
		Pore pressure cells	1979	12	0	12		
		Plumb bob	1987	1	0	1		
		Uplift pressure cell	Feb-89	24	0	24		
		pore pressure cell	1969	4	0	4		
5	Majalgaon	Cassagrande piezometer	Feb-88	18	0	18	In HSR 2020 qty.shown was 12, the same is corrected to 18 as per pre mansson report 2021	
		Twin Tube Piezometers	1984	16	0	16		
6	Lower Terna	Cassagrande piezometer	2011	14	0	14		
	CE	E Wise Total for 3 Dar	ns	209	2	207		
	Marathwa	ada Region Total fo	r 6 Dams	286	20	266		

 Table No. 4.1

 Dam wise Status of Dam Instruments Installed on Large Dams (Marathwada )

# As per IRDs inspection note dated 30.11.2018 forwarded vide letter no. 746 dated 15.12.2018

 Table No 4.2

 Mortality Status of Instruments installed on Large Dams ( Marathwada )

			Number	Of Instrument	ts
Sr. No.	Type of Instruments	Total	Working	Non- Working	Mortality (%)
1	2	3	4	5	6
(A)	Earth Dams		1	1	
1	Casagrande / Stand pipe /Vibrating wire Piezometers	68	00	68	100
2	Twin tube Piezometers	135	18	117	86.67
3	Horizontal/Vertical device / Cross arm surface settlement plug	2	2	00	00
4	Earth pressure cells	0	NA	NA	NA
5	Slope indicator	0	NA	NA	NA
	Total	205	20	185	90.24
(	B) Masonry Dams				
1	Pore pressure meters	16	0	16	100
2	Stressmeter	0	NA	NA	NA
3	Strainmeter/ No stress-strain meter	0	NA	NA	NA
4	Uplift pressure cells	63	0	63	100
5	Plumb bob/ Inverted Plumb Bob / co-ordimeter	2	0	2	100
6	Long Gauge extensometer, Multiple Bore hole extensometer	0	NA	NA	NA
7	Thermometers	0	NA	NA	NA
8	Jointmeters/Dial Gauge	0	NA	NA	NA
9	Tiltmeter	0	NA	NA	NA
	Total	81	0	81	100
	Instruments in	Total	Working	Non Working	Mortality
A)	Earth Dams	205	20	185	90.24
B)	Masonry Dams	81	0	81	100
	Grand Total	286	20	226	93.01

## Table No. 4.3

## Comparative Statement For Status of Instruments in Dams Marathwada Region

	Year HSR 2020				HSR 2021						
Sr. No	Name of Chief Engineer	Total Dams	Total Instruments	Functioning	Not- Functioning	% functioning	Total Dams	Total Instruments	Functioning	Not- Functioning	% functioning
1	Chief Engineer (WR) Aurangabad	3	76	0	76	0.00	3	77	18	59	23.38
2	Chief Engineer (CADA) Aurangabad	3	260	21	240	8.05	3	209	02	207	0.95
	Total	6	337	21	316	6.23	6	286	20	266	6.99

## Part-5

# Annual Performance Report of Meteorological Instruments

## PART - 5 Annual performances Report of Meteorological instruments installed on dams

### 5.1 General

Hazard potential of dam depends upon the possible hazard it poses to population on the downstream during flood. In case of gated spillways, generally flood is considered to impinge when reservoir is at F.R.L. If flood forecasting and warning systems are in place, flood impingement can be considered at lower when F.R.L. considering prior depletion.

The establishment of hydro-meteorological stations in the vicinity of every Class-I dam and rain gauge network in its catchments assumes vital importance due to its role in flood forecasting and warning. The hydro-meteorological station shall be capable of recording data relating to, among other parameters, rainfall, atmospheric pressure, maximum & minimum temperature and humidity, wind speed, wind direction, height of waves and reservoir water temperature. It is important that a representative proportion of the rain gauge network is linked to flood forecasting and warning control centre by telemetry.

Performance of the meteorological instruments dealt in this report is only the instruments operated and maintained by Dam authorities. In addition to this, there is vast network of the hydro meteorological stations stack which is operated and maintained by Hydrology Project. Same is not dealt in this AHSR.

### 5.2 **Observations**

From Pre/Post Monsoon Reports it is seen that the ANNEXURE-IV which is "Checklist of Various Meteorological Instruments installed on Dams" is not filled properly and quantity of number of instruments varies from year to year. As this status of instruments is submitted to C.W.C., New Delhi. Field authorities need to make sure that correct information is filled. Table 5.1 gives the dam wise status of the meteorological instruments, and Table 5.2 gives the status of morality of meteorological instruments installed in the region.

- As per Pre/Post Monsoon reports of Marathwada region it is seen that 133 various meteorological instruments installed on dams out of which 86 are functioning and 47 are non functioning. The non-functioning should be repaired/replaced on priority.
- As per the government circular CDA-1013/(207/13)/CAD(works)/ August-2013. It is mandatory to install **Pan Evaporimeter** to measure evaporation on all major and medium projects.

Efforts should be taken by field officers to establish automatic flood warning systems which will help in saving lives, livestock and property and will invariantly contribute to lessening of the overall impact of floods.

## Table- 5.1

Sr.	Name of		No.	Perform	mance	Status of Data	
No ·	dam with location	Name of instruments	of instrument s	Working	Not working	Analysis	
1	2	3	4	5	6	7	
		1) Rain Gauge on Dam (ordinary)	2	2	0		
		2) Rain Gauge in catchment( ordinary)	5	5	0		
		3) Rain Gauge on Dam (self-recorder)	1	1	0		
	Paithan	4) Pan Evaporimeter	2	2	0	done at field level	
		5 Wind direction recorder	1	1	0		
		6) Water stage recorder	2	1	1		
1		7)Cup counter Anemometer	4	1	3		
2	Narangi	1)Rain Gauge on Dam (ordinary)	1	0	1	Data collection is done at field level	
3	BorDahega on	1)Rain Gauge on Dam (ordinary)	1	1	0	Data collection is done at field level	
		1)Rain Gauge in catchment (self-recorder)	4	0	4	Data collection is done at field level	
		2) Rain Gauge on dam (Ordinary)	1	0	1	Data collection is done at field level	
		3) Rain Gauge on dam (Self-recorder)	1	0	1	Data collection is done at field level	
4	Lower Dudhana	4)Pan evaporimeter	1	0	1	Data collection is done at field level	
	SC	1)Rain Gauge on Dam (ordinary)	1	1	0	Data collection is	
5	Vishnupuri	2)Pan Evaporimeter	1	1	0	done at neid level	
6	Lahuki	1)Rain Gauge on Dam (ordinary)	1	1	0	Data collection is done at field level	
7	Soyegaon	1)Rain Gauge on Dam (ordinary)	1	1	0	Data collection is done at field level	
8	Sukhana	1)Rain Gauge on Dam (ordinary)	1	1	0	Data collection is done at field level	
9	Tembhapur i	1) Rain Gauge on Dam (ordinary)	1	0	1	Data collection is done at field level	
10	Dheku	1) Rain Gauge on Dam (ordinary)	1	1	0	Data collection is done at field level	

## Damwise status of meteorological instruments installed on dams

			No.	Perform	nance		
Sr. No.	Name of dam with location	Name of instruments	instru ment s	Working	Not working	Status of Data Analysis	
1	2	3	4	5	6	7	
11	Kesapur	1) Rain Gauge on Dam (ordinary)	1	0	1	Data collection is done at field level	
12	Khelna	1) Rain Gauge on Dam (ordinary)	1	1	0	Data collection is done at field level	
13	Nimbhaora	1) Rain Gauge on Dam (ordinary)	1	0	1	done at field level	
14	Jui	1) Rain Gauge on Dam (ordinary)	1	1	0	Data collection is done at field level	
		1) Rain Gauge on Dam (ordinary)	1	1	0	Data collection is	
15 Side		2) rain gauge on Dam(self-recorder)		0	1	done at field level	
	Siddheshwar	3) Pan Evaporimeter	1	0	1		
		4) Water level recorder	1	0	1	Data collection is done at field level	
1.6	Yeldari	1) Rain Gauge on Dam (ordinary)	1	1	0	Data collection is	
10		2) Rain Gauge on dam( self-recording)	1	0	1	done at field level	
17	Mehekari	1) Rain Gauge on Dam (self-recorder)	1	1	0	Data collection is done at field level	
18	Matkuli	1) Rain Gauge on Dam (ordinary)	1	0	1	Data collection is done at field level	
19	Mahasangvi	1) Rain Gauge on Dam (ordinary)	1	0	1	Data collection is done at field level	
		1) Rain Gauge on Dam (ordinary)	1	1	0	Data collection is done at field level	
		2 Rain Gauge on dam( self-recording)	1	1	0	Data collection is done at field level	
20	Majalgaon	3 Raingauge in Catchment (ordinary)	13	12	1	Data collection is done at field level	
		4) Rain gauge in catchment (Self recorder)	6	6	0	Data collection is done at field level	
		5) Pan evaporimeter	1	1	0	Data collection is	
		6) Other meterological instruments	1	0	1	done at field level	
21	Kambli	1) Rain Gauge on Dam (self-recorder)	1	0	1	done at field level	

			No.	Perform	mance		
Sr. No.	Name of dam with location	Name of instruments	instru ment s	Working	Not working	Status of Data Analysis	
1	2	3	4	5	6	7	
		1) Rain Gauge on Dam (ordinary)	1	1	0	Data collection is done at field level	
22	Manjra	3) Rain Gauge in Catchments(ordinary)	1	1	0	Data collection is done at field level	
		5) Pan evaporimeter	1	1	0	Data collection is done at field level	
		1) Rain Gauge on Dam (ordinary)	1	1	0	Data collection is done at field level	
23	Lower Manar	2) Pan evaporimeter	1	1	0	Data collection is done at field level	
25		3) Rain gauge on Dam (Self recorder)	1	0	1	Data collection is done at field level	
		4)water stage recorder	2	1	1	Data collection is done at field level	
24	Upper Manar	1) Rain gauge on Dam (ordinary)	1	1	0	Data collection is done at field level	
25	Masalga	1) Rain Gauge on Dam (ordinary)	1	1	0	Data collection is done at field level	
26	Jakapur	1)Pan Evaporimeter	1	1	0	Data collection is done at field level	
27	Kurnoor	1)Pan Evaporimeter	1	1	0	Data collection is done at field level	
28	Terna	1) Rain Gauge on Dam (ordinary)	1	1	0	Data collection is done at field level	
29	Chandani	1) Rain Gauge on Dam (ordinary)	1	1	0	Data collection is done at field level	

<b>C</b>	Numera		No.	Perform	nance	Status of Data	
Sr. No.	with location	Name of instruments	of instruments	Working	Not working	Analysis	
1	2	3	4	5	6	7	
		1) Rain Gauge on Dam (ordinary)	1	1	0	Data collection is done at field level	
						Data collection is	
		2) Rain Gauge on Dam (Self recorder)	1	0	1	done at field level	
		3)Rain Gauge in catchment(ordinary)	8	8	0	Data collection is done at field level	
	т	5)Pan Evaporimeter	1	1	0	Data collection is done at field level	
- 30	Isapur	6)Wind velocity recorder	1	0	1	Data collection is done at field level	
		7) Wind direction recorder	1	0	1	Data collection is done at field level	
		8)Wet & Dry Bulb Thermometer	1	0	1	Data collection is done at field level	
		9)Barometer	1	0	1	Data collection is done at field level	
		1) Rain Gauge in catchment(self- recorder)	4	0	4	Data collection is done at field level	
		2) Rain Gauge on Dam (self-recorder)	1	0	1	Data collection is done at field level	
		3) Rain Gauge in catchment(ordinary)	7	0	7	Data collection is done at field level	
31	Lower Terna	4) Pan Evaporimeter	1	0	1	Data collection is done at field level	
		5) Wind direction recorder	1	0	1	Data collection is done at field level	
		6) Wet/ Dry bulb Thermometer	1	0	1	Data collection is done at field level	
		7) Raingauge on Dam (ordinary)	1	0	1	Data collection is done at field level	
32	Khandala	1) Rain Gauge on Dam (ordinary)	1	1	0	Data collection is done at field level	
33	Kesarjawalga	1) Rain Gauge on Dam (ordinary)	1	1	0	Data collection is done at field level	

<b>C</b>	Numeral		No.	Perform	nance	Status of Data	
Sr. No.	with location	Name of instruments	of instruments	Working	Not working	Analysis	
1	2	3	4	5	6	7	
						Data collection is	
34	Turori	1) Rain Gauge on Dam (ordinary)	1	1	0	done at field level	
					_	Data collection is	
35	Nandgaon	1) Rain Gauge on Dam (ordinary)	1	1	0	done at field level	
24			4	4	0	Data collection is	
36	Haranı	1) Rain Gauge on Dam (ordinary)	1	1	0	done at field level	
27	D:	1) Dain Cause on Dam (andiasan)	1	1	0	Data collection is	
3/	Kui	1) Rain Gauge on Dam (ordinary)	1	1	0	done at field level	
20	Salvat	1) Pair Cause on Dam (andinam)	1	1	0	Data collection is	
30	Sakat	1) Kan Gauge on Dam (ordinary)	1	1	0	Data collection is	
30	Benitura	1) Rain Gauge on Dam (ordinary)	1	1	0	done at field level	
57	Delittura	1) Rain Gauge in catchment	1	1	0	Data collection is	
40	Bedkinala	(ordinary)	1	1	0	done at field level	
10	Deciminata	(ordinary)	1	1		Data collection is	
41	Diggi	1) Rain Gauge on Dam (ordinary)	1	1	0	done at field level	
						Data collection is	
42	Achler	1) Rain Gauge on Dam (ordinary)	1	1	0	done at field level	
						Data collection is	
43	Kunsawali	1) Rain Gauge on Dam (ordinary)	1	1	0	done at field level	
						Data collection is	
44	Banganga Di	1) Rain Gauge on Dam (ordinary)	1	1	0	done at field level	
						Data collection is	
45	Sangmeshwar	1) Rain Gauge on Dam (ordinary)	1	1	0	done at field level	
	0					Data collection is	
46	Sindgaon	1) Rain Gauge on Dam (ordinary)	1	1	0	done at field level	
						Data collection is	
47	Babhali	1) Rain Gauge on Dam (ordinary)	1	0	1	done at field level	
		Raingauge on dam (self recorder)	1	0	1	Data collection is	
40	II'm and III D	Raingauge on dam (sen recorder)	-	v	-	done at field level	
48	Hirapuri H.L.D	Raingauge in catchment (self	1	0	1	Data collection is	
		recorder)	I	v	1	done at field level	
	•	Total	133	86	47		

## Table No. 5.2

		Number Of Instruments				
Sr. No.	Type of Instruments	Total	Working	Non- Working	Mortality (%)	
1	2	3	4	5	6	
1	Rain gauge on dam (Ordinary)	43	34	9	20.93	
2	Rain gauge on dam (Self Recorder)	11	3	8	72.73	
3	Rain gauge in catchment (Ordinary)	35	27	8	22.85	
4	Rain gauge in catchment (Self Recorder)	15	9	6	35.71	
5	Pan Evaporimeter	12	9	3	25.0	
6	Wind velocity recorder	1	0	1	100	
7	Wind direction recorder	3	1	2	66.67	
8	Wet/dry bulb thermometer	2	0	2	100	
9	Thermometer for air jump	0	0	0	0	
10	Thermometer for reservoir water temp	0	0	0	0	
11	Water stage recorder	5	2	3	60.00	
12	Barometer	1	0	1	100	
13	Sun shine recorder	0	0	0	0	
14	Max & Min thermometer	0	0	0	0	
15	Wave height recorder	0	0	0	0	
16	Hydrometer	0	0	0	0	
17	Humidity Meter	0	0	0	0	
18	Automatic level controller	0	0	0	0	
19	Steven meter	0	0	0	0	
20	DWLL	0	0	0	0	
21	Other Meteorological Instruments	6	2	4	66.67	
	Total	133	86	47	35.34	

## Mortality status of Meteorological Instruments Installed on Dams

## Part-6

# National Committee on Dam Safety (NCDS) Documents

## Part- 6 National Committee on Dam Safety (NCDS) Documents

## Importance of National Committee on Dam Safety (NCDS) Documents:

Central Water Commission (CWC) has laid down various guidelines covering the standardized dam safety practices-essentially guiding the dam owners in preparation of Emergency Action Plans, Periodical Dam Safety inspections, comprehensive dam Safety evaluation and appropriate institutional framework for dam safety. Their implementation is emphasized during the meetings of National Committee on Dam Safety (NCDS) and through the communications sent in this regard.

During the 34<sup>th</sup> meeting held at Chennai in March 2015 it was requested to all the Dam owners to take necessary steps for preparation of EAPs & other documents & report to NCDS Secretariat about the number of Dams for which EAPs & other documents have been prepared, along with the target dates for the preparation of EAPs & other documents for the remaining Dams.

The documents to be prepared as per National Committee on Dam Safety are as under & these shall be properly maintained and kept up to date by including latest information available.

1. EAP

2. R.O.S & G.O.S.

3. Data Book

4. O & M manual

5. Record Drawing & Completion Report,

#### 1. EAP: Emergency Action Plan:

An Emergency action plan is a formal plan that identifies potential emergency conditions at a dam prescribes the procedures to be followed to minimize property damage and loss of life. The EAP contains procedures and information to assist the dam owner in taking necessary actions in time to moderate or alleviate the problems, in addition to issuing early warning & notification messages to responsible emergency management authorities,viz.,District Magistrate/Collector, Armed Forces, Paramilitary forces, Project Authorities & other Central / State Agencies. It also contains inundation maps to show the emergency management authorities of the critical areas for necessary relief and rescue actions in case of an emergency. In a nutshell, it outlines "who does, what, where, when and how" in an emergency situation or unusual occurrence affecting the Dams. The Emergency Action Plan has to be prepared as per Guidelines circulated by C.W.C., New Delhi's vide document no. CDSO\_GUD\_DS\_01\_v2.0, February-2016. (Guidelines for Developing EAP for Dams)

### 2. R.O.S. (Reservoir operation schedule) & G.O.S. (Gate Operation Schedule) :

It is very necessary to lay down operating procedures of all storage reservoirs with the objective to limit the flood stages in the river downstream and with maximum feasible utilization of the flood capacity of the river channel downstream of reservoirs, consistent with the safety of the dam. A proper reservoir operation schedule should be in place. For this purpose a schedule of opening and closing the gates to limit the reservoir levels to preset gauges should be laid down. Schedule for the dam as per operation & maintenance manual should be strictly adhered. The entire capacity of reservoir is used for active conservation. When the reservoir rises above active conservation, operation will be in accordance with the standing operation procedures. Inflow forecasting arrangement should be made for easy operation of gates. The Engineer in charge should inform immediately to the flood maintenance engineer downstream and flood –fighting center of the releases from the reservoir.

### 3. Data book:

Proper assessment of dam safety involves a thorough review of design, construction and performance records prior to conducting a field examination. The Data Book is an unpublished document which is prepared before the initial safety inspection of each dam. This book is abbreviated, convenient source of information, summarizing all pertinent records and history related to the safety of a dam and is a reference for the evaluation team. This Data Book should answer most questions about the dam. A list of reference is included if additional information is needed. Continual updating of the Data Book will be required as future inspections are made, new problems arise, new investigations are undertaken and remedial treatments performed. Documentation of all projects may be done in the Data Book format which is the primary data base for the team evaluating the safety of a dam. (Guidelines on standardized Data Book format are available at http://www.cwc.gov.in/ Dam\_safety.html)

### 4. O & M Manual:

It is desirable that a separate manual is available with the officers. The officers Incharge of such works are requested to personally go through the manual and maintain the records from time to time in such a manner as to give their successors complete and correct idea of the state of each of the several storage works in their charge and the different standing orders on all matters concerning the works. This will enable them to tackle problems as they arise, by quickly referring to the manual as far as possible without having to depend on the office to give information. The complete set of manual for each of the storage works should be personally handed over to successor by each concerned officer.

Copies of the maintenance manual shall be maintained at all offices right from sectional office to Circle office.

It is also necessary that the manuals are inspected at the time of inspection by the superior officers. Record of handing over and inspection should be maintained.

### 5. Record Drawing & Completion Report :

The importance of record drawings & completion report as an archival data need not be emphasized. All efforts should be made by field engineers to prepare Record Drawing & Completion Report and store them for future reference

Sr. No	Name of C.E.	Total Dam	Received	Not Received	Remarks	
1	C.E, W.R, Aurangabad	14	4	10	All EAP must be updated as per CWC guide lines	
2	C.E, CADA, Aurangabad	23	5	18	2016 & copy of EAP should be made available to DSO.	
	Total	37	9	28		

Table - 6.1Status of Emergency Action Plan (EAP)

Table - 6.2Status of Reservoir Operation Schedule (ROS)

Sr.	Name of C.E.	Total	Received	Not	Remarks
No		Dam		Received	
1	C.E, W.R, Aurangabad	14	6	8	Automatic Gate (1)
					Updated copy of ROS should be made available to DSO
2	C.E. CADA, Aurangabad	23	7	16	Updated copy of ROS should be made available to DSO
	Total	37	13	24	

Table - 6.3Status of Gate Operation Schedule (GOS)

Sr. No	Name of C.E.	Total Dam	Received	Not Received	Remarks
1	C.E, W.R, Aurangabad	14	4	10	Automatic Gate (1) Updated copy of GOS should be made available to DSO
2	C.E. CADA, Aurangabad	23	7	16	Updated copy of GOS should be made available to DSO
	Total	37	11	26	

<b>Table - 6.4</b>
Dam Wise Status of GOS & ROS, EAP (Class-I Dams)

	R = Received, NR = Not Received, AG = Automatic Gate								
Sr.	Name of Dam	EAP	ROS	GOS					
No									
1	2	3	4	5					
GMID	C								
A) Chie	A) Chief Engineer, Water Resource Department, Aurangabad								
I) Supe	rintending Engineer, Aurangabao	l Irrigation Circle,	Aurangabad						
1. Exec	utive Engineer, MID-1, Aurangab	oad		1					
1	Shivana Takli	R(2019)	R(2014)	NR					
II) S.E,	N.I.C, Nanded								
1) Exec	utive Engineer, NID(South), Na	nded							
2	Lower Manar	NR	A G	A G					
3	Upper Manar	NR	R(2014)	NR					
2) Exec	cutive Engineer, NID(North), Na	nded							
4	Balegaon HL Barrage	NR	NR	NR					
5	Vishnupuri Barrage	NR	NR	NR					
6	Digras Barrage	NR	NR	NR					
7	Babhali Barrage	NR	NR	NR					
8	Amdura HL Barage	NR	NR	NR					
3) Exec	cutive Engineer, UPPD-1, Nandeo	1							
9	Isapur	R(2008)	R(2014)	R(1999)					
4) Exec	cutive Engineer, PID, Basmatnag	ar							
10	Yeldari	R(2019)	R(2014)	R(1989)					
11	Siddheshwar	R(1994)	R(2014)	R(1989)					
5) Exec	cutive Engineer, MID,Parbhani								
12	Mudgal HL Barrage	NR	NR	NR					
13	Dhalegaon HL Barrage	NR	NR	NR					
III) S.E	E, BIPC, Parali (V)								
1. Exec	utive Engineer, BID, Beed								
14	Upper Kundlika	NR	NR	NR					
	Received	4	5	3					
	Not Received	10	8	10					
	Automatic Gate	0	1	1					
	Total	14	14	14					

Sr.	Name of Dam	EAP	ROS	GOS
1 INO	2	3	4	5
B) Chie	- 			
I Super	intending Engineer. & Admn. CA	DA. Aurangabad		
1)Exect	utive Engineer. IID. Nathnagar (1	North). Paithan		
1	Paithan (Jayakwadi)	R(2019)	R(2010)	R(1999)
2	Apegaon H.L. Barrage	NR	NR	NR
3	Mangrul H.L. Barrage	NR	NR	NR
4	Loni Savangi H.L. Barrage	NR	NR	NR
5	Raja Takli H.L. Barrage	NR	NR	NR
6	Jogaldevi H.L. Barrage	NR	NR	NR
2)Exec	utive Engineer, NMID, Vaijapur			
7	Bordahegaon	NR	R(2009)	R(2009)
8	Narangi	NR	R(2009)	R(2009)
3)Exec	utive Engineer, JID, Jalna			
9	Lower Dudhna	NR	NR	NR
II) Sup	erintending Engineer,& Admm, C	CADA, Latur		
1)Exect	utive Engineer, LID-1, Latur		·	
10	Lower Terna	R(2020)	R(2018)	R(1999)
11	Manjra	R(2020)	R(2018)	R(1990)
12	Masalaga	R(2020)	R(2018)	R(2008)
13	Gunjarga K.T.Weir	NR	NR	NR
14	Rajegaon K.T.Weir	NR	NR	NR
15	Khulgapur	NR	NR	NR
16	Bindgihal	NR	NR	NR
17	Karsa Poharegaon Barrage	NR	NR	NR
18	Takalgaon Deola Barrage	NR	NR	NR
19	Dhanegaon High Level Barrage	NR	NR	NR
20	Sai Barrage	NR	NR	NR
21	Shivni H.L.Barrage	NR	NR	NR
22	Hosur Barrage	NR	NR	NR
III) Sup	perintending Engineer,.& Admm,	CADA, Beed		
1)Exect	utive Engineer, MID, Parali(V)		I	
23	Majalgaon	R(2020)	R(2007)	R(2006)
	Received	5	7	7
	Not Received	18	16	16
	Total	23	23	23

Sr. No.	Name of C.E.	.E. Domo	Completio	on Report	Record	Drawing	Data	Book	O & M	Manual
		Dams	Received	Not received	Received	Not received	Received	Not received	Received	Not Received
1	C.E, W.R, Aurangabad	14	1	13	3	11	1	13	3	11
2	C.E. CADA, Aurangabad	23	2	21	3	20	1	22	3	20
	Total	37	3	34	6	31	2	35	6	31

Table - 6.5Status of Other NCDS Documents (Class-I Dams)

<b>Table - 6.6</b>
Dam Wise Status of Other NCDS Documents

Sr. No.	Name of dam	Completion Report	Record Drawing	Data Book	O & M Manual			
1	2	3	4	5	6			
GMID	C	<u> </u>		<u>.</u>				
A) Ch	ief Engineer, Water.Resou	rce, Aurangabad						
I) Sup	perintending Engineer, Auran	ngabad Irrigation	Circle, Aurangaba	d				
1. Exe	cutive Engineer, MID-1, Aur	angabad						
1	Shivana Takli	NR	NR	NR	NR			
II) S.E	C, N.I.C, Nanded							
1) Exe	cutive Engineer, NID(South	), Nanded						
2	Lower Manar	NR	NR	NR	NR			
3	Upper Manar	NR	NR	NR	NR			
2) Exe	cutive Engineer, NID(North	n), Nanded						
4	Balegaon HL Barrage	NR	NR	NR	NR			
5	Vishnupuri Barrage	NR	NR	NR	NR			
6	Digras Barrage	NR	NR	NR	NR			
7	Babhali Barrage	NR	NR	NR	NR			
8	Amdura HL Barage	NR	NR	NR	NR			
3) Exe	cutive Engineer, UPPD-1, N	anded						
9	Isapur	R	R	R	R			
4) Exe	cutive Engineer, PID, Basm	atnagar						
10	Yeldari	NR	R	NR	R			
11	Siddheshwar	NR	R	NR	R			
5) Exe	cutive Engineer, MID,Parbh	ani						
12	Mudgal HL Barrage	NR	NR	NR	NR			
13	Dhalegaon HL Barrage	NR	NR	NR	NR			
III) St	III) Superintending Engineer, BIPC, Parali (V)							
1. Exe	cutive Engineer, BID, Beed							
14	Upper Kundlika	NR	NR	NR	NR			
	Received	1	3	1	3			
	Not Received	13	11	13	11			
	Total	14	14	14	14			

Sr.	Name of dam	Completion	Record	Data	O & M
No.		Report	Drawing	Book	Manual
1	2	3	4	5	6

B) C.E	E. & Chief Administrator, CA	DA, Aurangabad			
I) Sup	erintending Engineer, Aura	ngabad Irrigation	Circle, Aurangab	ad	
1)Exec	cutive Engineer, JID, Nathna	agar (North), Pait	han		
1	Paithan (Jayakwadi)	NR	R	R	R
2	Apegaon H.L. Barrage	NR	NR	NR	NR
3	Mangrul H.L. Barrage	NR	NR	NR	R
4	Loni Savangi H.L. Barrage	NR	NR	NR	R
5	Raja Takli H.L. Barrage	NR	NR	NR	NR
6	Jogaldevi H.L. Barrage	NR	NR	NR	NR
2)Exe	cutive Engineer, NMID, Vai	japur			
7	Bordahegaon	NR	NR	NR	NR
8	Narangi	NR	NR	NR	NR
3)Exe	cutive Engineer, JID, Jalna				
9	Lower Dudhna	NR	NR	NR	NR
B) Su	perintending Engineer, & A	dmm, CADA, Lat	ur		
1)Exec	cutive Engineer, LID-1, Latu	r	1	1	ſ
10	Lower Terna	R	R	NR	NR
11	Manjra	R	R	NR	NR
12	Masalaga	NR	NR	NR	NR
13	Gunjarga K.T.Weir	NR	NR	NR	NR
14	Rajegaon K.T.Weir	NR	NR	NR	NR
15	Khulgapur	NR	NR	NR	NR
16	Bindgihal	NR	NR	NR	NR
17	Karsa Poharegaon Barrage	NR	NR	NR	NR
18	Takalgaon Deola Barrage	NR	NR	NR	NR
10	Dhanegaon High Level	N TD	NID	NID	NID
19	Barrage Sai Barrage	NR	NR	NK	NK
20	Sai Dallage	NR	NR	NR	NR
21	Hosur Barrage	NR	NR	NR	NR
22		NR NR	NR	NR	NR
C) Su	perintending Engineer, & A	dmm, CADA, Bee	d		
1)Exec	cutive Engineer, MID, Parali			NID	
23	Majalgaon	NR 2			NR 2
	Keceived	21	20	22	20
	Not Received	21	20	22	20
	l otal	23	25	23	25



# Part-7 DHARMA: Dam Health and Rehabilitation Monitoring Application

## Introduction :

Dam health & Rehabilitation Monitoring application (DHARMA) is a web based asset management software to support the effective collection and management of authentic asset and health data for all large dams in India and address key dam safety challenges of

- i) Insuring Completeness of information.
- ii) Bring stake holders together
- iii) Effectively managing asset inventory.
- iv) Assess soundness of Dam health.

#### **Design and Development :**

DHARMA software consist of seven modules.

- i) Project features
- ii) Project portfolio
- iii) Engineering features.
- iv) Asset health.
- v) Asset rehabilitation.
- vi) Stake holders and
- vii) Document library.

The first three modules (i to iii consist of mostly static data, to be enter once and rarely undergo a change where as modules iv) and v) will be dynamic and requires regular updating with information associated with inspections investigations, instrumentation and rehabilitation works. Modules vi ) and vii)contain information useful for reference.

All field EE's are required to fillup attached two forms (Dam Data Manager & Dam Health Engineer) for each Dam in their jurisdiction by 15th July 2021 & its review will be taken by Hon. DG, MERI, Nashik by 15th Aug 2021.

	DHARMA	DHAF	RMA A <sub>1</sub>	oplication	User Reg	gistration	Form
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1.	Date of Application:	< dd/mm/yyyy>				
2.	Type of User:	Dam Data Manager				
3.	Name of the Applicant:	<title>. <name></name></title>	<title>. <name></name></title>			
4.	Designation:					
5.	Name of the Organization:					
6.	Complete Postal Address:					
7.	Email ID:					
8.	Mobile Number:		Office Tel. Number:			
9.	Current Responsibilities:	<ul> <li>Coordinating Dam Safety</li> <li>Water Resource Management</li> <li>Dam Design</li> <li>Dam Construction / Rehabilitation</li> <li>Dam Operations</li> <li>Academic / Research</li> <li>Other: Colorse coercify&gt;</li> </ul>				
10.	Viewing Permission Required for:	Project Features     Project Portfolio     Engineering Features				
11.	Editing Permission Required for:	<ul> <li>Project Features</li> <li>Project Portfolio</li> <li>Engineering Features</li> </ul>				
12.	Provide List of Dams					

## Dam Data Manager

Please select out of the choice provided; add separate sheets for providing additional information.

Declaration: I, hereby declare that the information provided in the application is true. I further declare that I will not use the information collected from DHARMA software for any unlawful activities and / or to the detriment of the Central or State Governments.

Signature and Seal / stamp of	Signature:	
	Name:	
the Applicant:	Designation:	
	Seal / Stamp:	

Please send the completed Application Form to the concerned Licensee.



## DHARMA Application User Registration Form Dam Health Engineer



1.	Date of Application:	< dd/mm/yyyy>				
2.	Type of User:	Dam Health Engineer	Dam Health Engineer			
3.	Name of the Applicant:	<title>. <name></name></title>				
4.	Designation:					
5.	Name of the Organization:					
6.	Complete Postal Address:					
7.	Email ID:					
8.	Mobile Number:		Office Tel. Number:			
9.	Current Responsibilities:	<ul> <li>□ Coordinating Dam Safety</li> <li>□ Water Resource Management</li> <li>□ Dam Design</li> <li>□ Dam Construction / Rehabilitation</li> <li>□ Dam Operations</li> <li>□ Academic / Research</li> <li>□ Other: ≤ please specify≥</li> </ul>				
10.	Viewing Permission Required for:	<ul> <li>Project Features</li> <li>Project Portfolio</li> <li>Engineering Features</li> </ul>	Project Features     Project Portfolio     Engineering Features			
11.	Editing Permission Required for:	<ul> <li>Project Features</li> <li>Project Portfolio</li> <li>Engineering Features</li> </ul>				
12.	Provide List of Dams					

Please select out of the choice provided; add separate sheets for providing additional information .

Declaration: I, hereby declare that the information provided in the application is true. I further declare that I will not use the information collected from DHARMA software for any unlawful activities and / or to the detriment of the Central or State Governments.

Signature and Seal / stamp of the Applicant:	Signature:	
	Name:	
	Designation:	
	Seal / Stamp:	

Please send the completed Application Form to the concerned Licensee.

## Table 7.1

## Data filling status on DHARMA portal

Sr. No	Name of Dam	NRLD	Dharma data filling			
		registration	status (%)			
		number				
1	2	3	4			
[A] Chief Engine	eer & Chief Administrat	tor (CADA), Aurangabad				
I) Superintend	ing Engineer, CADA,	Aurangabad				
1) Executive Engineer, JID, Nathnagar (North), Paithan						
1	Paithan (Jayakwadi)	MH09HH0597	48			
2	Mangrul H.L.Barrage	MH09MH2127	11			
3	Rajatakli H.L.Barrage	MH09MH2128	11			
4	Jogladevi H.L.Barrage	MH09MH2125	11			
5	Loni savangi H.L. Barrage	MH09MH2126	11			
6	Apegaon H.L. Barrage	MH09MH2123	11			
2) Executive Eng	gineer, NMID, Vaijapur					
7	Bor dahegaon	MH09MH1491	25			
8	Narangi	MH09MH1490	31			
3) Executive Eng	gineer, JID, Jalna					
9	Lower Dudhna	MH09MH2089	11			
II) Superintending Engineer, CADA, Beed						
1) Executive Engineer, MID, Parali (V)						
10	Majalgaon	MH09HH1174	10			
III) Superintending Engineer, CADA, Latur						
1) Executive Engineer, LID-1, Latur						
11	Lower Terna	MH09MH1228	11			
12	Manjra	MH09MH1585	09			
13	Masalga	MH09LH1408	11			
14	Khulgapur H.L. Barrage	MH09MH2181	11			
15	Bindgihal Latur Type Barrage	MH09MH2183	09			
16	Sai H.L. Barrage	MH09LH2131	11			
17	Takalgaon Devla Latur type Barrage	MH09MH2135	11			
18	Shivni H.L. Barrage	MH09MH2132	09			
19	Hosur Barrage	MH09MH2420	11			
20	Gunjarga K.T. Weir	MH09MH2421	10			
21	Rajegaon K. T. Weir	MH09MH2248	11			

1	2	3	4	
22	Dhanegaon H.L. Barrage	MH09MH2129	10	
23	Karsa Pohregaon Barrage	MH09MH2246	11	
B) Chief Engine	er (WR), Aurangabad			
I) Superintend	ing Engineer, Aurang	abad Irrigation Circle,	Aurangabad	
1) Executive En	gineer, MID-1, Aurangal	bad		
24	Shivna takli	MH09MH1651	66	
II) Superintendi	ng Engineer, Nanded Ir	rigation Circle, Nanded	L	
1) Executive En	gineer, NID, South, Nar	nded		
25	Lower Manar	MH09MH0170	11	
26	Upper Manar	MH09HH1806	11	
2) Executive En	gineer, NID, North, Na	nded		
27	Balegaon HL Barrage	MH09MH2117	09	
28	Vishnupuri	MH09LH1254	11	
29	Digras H.L. Barrage	MH09HH2116	10	
30	Babhali H.L. Ba <del>rr</del> age	MH09MH2118	11	
31	Amdura H.L. Barrage	MH09HH2119	09	
3) Executive En	gineer, UPPD-1, Nande	d		
32	Isapur (UPP)	MH09HH0947	34	
4) Executive En	gineer, PID, Basmatnag	ar		
33	Yeldari	MH09HH0171	37	
34	Siddheshwar	MH09HH0172	46	
5) Executive En	gineer, MID,Parbhani		L	
35	Mudgal HL Barrage	MH09MH2121	11	
36	Dhanegaon HL Barrage	MH09MH2129	10	
III) Superintending Engineer, BIPC, Paral (V)				
1) Executive Engineer, BID, Beed				
37	Upper Kundalika	Proposed to be included in NRLD		



# DHARMA

Integrated Approach for Asset Management of Dams in India

Information Bulletin No.4

anuary 2019





## The Dam Health and Rehabilitation **Monitoring Application (DHARMA)**

is being developed as a part of the institutional strengthening component of the Dam Rehabilitation and Improvement Project (DRIP). DRIP is an initiative undertaken by the Ministry of Water Resources, River Development and Ganga Rejuvenation, Government of India with the financial assistance of The World Bank.

DHARMA has been designed and developed to enhance the capacity of individuals and organisations throughout India to manage their dam assets scientifically and professionally so as to sustain advantages of dams. This Information Bulletin No.4 has been prepared by the Central Project Management Unit (CPMU) to present an overview of the purpose and



Technical Assistance

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## What is DHARMA?

#### Introduction

There are 5264 large dams in operation in India and 437

are under construction. In addition, there are several thousand smaller dams. All these dams are vital for ensuring the water security of the country in a sustainable manner and regulating water during the rainy season to prevent floods.

Today, many of these dams are facing various

structural deficiencies as well as shortcomings in the operation and monitoring facilities. There are also inefficiencies in the monitoring of real-time information regarding dam health and ongoing rehabilitation measures. These conditions affect the safety of the structures and pose risks to life and properties of people downstream of dam.

In April 2012, the six-year Dam Rehabilitation and Improvement Project (DRIP) was launched at an

estimated cost of 2100 Crore INR for assisting dam-owning agencies in rehabilitating selected dams across selected states.

In 2017, the project has been extended by two years, until June 2020, to finish all of the programmed rehabilitation works on 223 dams in 7 states, with a revised cost of 3466 Crore INR.

In this context, the Dam Health and Rehabilitation Monitoring Application (DHARMA) has been designed and developed to enhance the capacity of individuals and organisations throughout India to manage their dam assets scientifically and professionally so as to sustain advantages of dams (irrigation and water supply, flood control, hydropower etc.) and prevent disasters.



## DHARMA Information Bulletin no, 4

## Why is it needed ?

Managing the Dam Safety of over five thousand dams entails a number of obstacles to overcome. The prime challenge is to deliver the precious dam health information collected during the site inspection to the State and Central **Dam Safety Organisations (DSOs)** in a timely and secure manner. Improving this transmission of information thanks to data analysis will generate a more precise monitoring of the dams' health in DSOs as well as a more informed prioritization of rehabilitation works. To accomplish this goal, the four main challenges listed below must be overcome; it is DHARMA's goal to address these challenges.



Figure 2: The purposes of DHARMA

#### 1. Bring Stakeholders Together

DHARMA will ensure that details of all stakeholders are recorded and maintained. Such details may pertain to individuals as well as organisational entities associated with dam planning and design, construction, operation and maintenance, and rehabilitation.

#### 2. Ensure Completeness of Information

DHARMA will enable gathering and updating of dam asset information in a centralised and structured manner so as to overcome limitations of multiplicity of agencies, wide geographical spread, voluminous data, varied terminologies and units, unknown and mismatched time reference and inconsistent formats.

#### 3. Assess Soundness of Dam Health

DHARMA will ensure prompt capturing of inspection and investigation data directly by the 'Dam Health Engineers' and provide tools for correct analysis and interpretation of this time dependent data.

4. Effectively manage Asset Inventory

DHARMA will provide a complete data collection and management platform for assimilation of varied information for every dam component across all dam projects, also thereby benefiting from the insights and learning curves of a wider stakeholder spectrum.

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# The Users of DHARMA

#### DHARMA User Types

DHARMA has been designed for individuals and organisations at **Dam**, **State and Central level**. Owing to the large number of dams, several thousand individuals are expected to use the software; they will be assigned to seven main user roles across three tiers, as presented below:



The highest tier 'Licensors' includes the 'Central Admin' and 'Central Super Admin' roles — these are based in the Central Dam Safety Organisation (in Central Water



Commission) and are responsible for administrative control and distribution of the DHARMA software. One of the responsibilities of the 'Licensors' is to grant licenses to the second 'Licensees' tier which

## DHARMA Information Bulletin no. 4

includes the 'Licensee Admin' and 'Licensee Super Admin' roles. These are typically members of Central or State dam owning organisations (eg. State Water Resources



(eg. State Water Resources Departments). Licensees, in turn, can add three types of 'Application Users' namely 'Dams Data Manager', 'Dam Health Engineer' and 'General User' who are responsible for managing and updating the data in DHARMA.

A clear distinction is made between the 'Dams Data Manager' (DDM) and 'Dam Health Engineer' (DHE). The Dams Data Manager's role is to manage the static information of dams, i.e. information that is entered once into the software and rarely changes (such as Spillway Capacity,

Location of Dam, Access...). He/she is authorized to manage the data of the first three modules, presented in the next page. The **Dam Health Engineer's** role is to manage dynamic data of a Dam, i.e. data that requires regular updates such as inspection report, investigations, instrumentation data...

DHEs are able to enter their inspection report directly on the software. A mobile application will also be developed

for them to enter and upload their inspection report directly from dam site. An option to upload geo-referenced data and photos of each deficiency will be included so as to report deficiencies as precisely as possible.



	Dams Data Manager (DDM)	Dam Health Engineer (DHE)
Type of Data handled	Static Data	Dynamic Data
Modules	Modules 1 to 3: Project Features, Project Portfolio, Engineering Features	Modules 4 to 7: Asset Health, Asset Rehabilitation, Stakeholders, Document Library
Tasks assigned	<ul> <li>Entering high level information of the dam (Height, location, access,)</li> <li>Creating the Portfolio of the Dam by assembling the different DHARMA components to match the physical layout of the dam</li> <li>Geo-referencing of each component on Google Maps and adding photos</li> <li>Entering the technical details of each component (Dam Block, Spillway, Gailery)</li> </ul>	<ul> <li>Entering the regular pre and post monsoon inspection reports</li> <li>Entering and updating the O&amp;M, Investigations, Instrumentation, and EAP data of the dam</li> <li>Entering the details of rehabilitation works implemented at the dam</li> <li>Entering the contact details of the dam's staff and suppliers in the Stakeholders Module</li> <li>Uploading all important dam documents in pdf for mat into the Document Ubrary Module</li> </ul>
	Figure 4: Distinction betw	een DDM and DHE Pag

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### **DHARMA** Modules

DHARMA consists of the 7 modules and 2 additional data analysis tools presented below:

#### Static Modules

#### 1. Project Features

This module gives the static, high-level details of a dam project, such as the Dam's Height, Location, Access details... The General, Location and Financial information will be stored for all projects as well as the details of specific benefits provided by each dam: Irrigation, Hydropower, Navigation, Water Supply, Industrial, Tourism, Flood Control, Fishing, and Other Benefits.

#### 2. Project Portfolio

It allows the Dams Data Manager to describe the makeup of his/her dam project using seventeen building blocks, the DHARMA components (Figure 6). Each component is added and organized in layers, similar to the MS Windows Explorer menu. For each component, the user can locate its exact position on Google Maps, upload pictures and schematics.



Figure 5: DHARMA Project Portfolio Map

#### 3. Engineering Features

This module contains the technical details associated with each of the components entered in the Project Portfolio module. For example, whereas the name, location, photos and schematics of a storage reservoir would be entered in the Project Portfolio module, it is in Engineering Features that the volumes, elevations and dimensions are provided.

#### **Dynamic Modules**

#### 4. Asset Health

This module supports the creation of regular pre and post-monsoon inspections and specific inspections. In this module, the Dam Health Engineers can also upload Instrumentation, Operation & Maintenance (O&M) and Emergency Action Plan (EAP) data, which is attached to the components from the Project Portfolio.

#### 5. Asset Rehabilitation

Also to be administered by designated Dam Health Engineers, it captures the details of any rehabilitation works (minor or major) at the dam project. The need for future rehabilitation works should be identified in the inspection forms of the asset health module however, previous or historic rehabilitation works (pre-DHARMA) can also be entered into the module independently.

#### 6. Stakeholders

The purpose of this module is to capture details of all individuals and organizations involved with each dam project including dam owners, operators, designers, consultants, contractors, and suppliers. Simple forms are provided explaining the nature and duration of involvement of each party and their contact details.

#### 7. Document Library

The last module enables users to upload important designs and documents into a user-friendly database from where they can be easily retrieved using filters and other search criteria. An additional functionality will allow users to tag the documents such that they can be retrieved from other relevant sections of the software using hyperlinks.

#### Data Analysis Tools

The **Dashboard** enables Dam Safety Organisations to monitor the data-entry for each dam and to pinpoint dams with critical deficiencies.

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	The owner want to be address of the owner.	-	Citra I	174	100		-
3	Calls Free Persons incomment	2	800	1.34	1000	100	-
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Figure 6: DHARMA Static Dashboard

The **Report Generator** creates lists of dams responding to selected criteria. (State, Purpose, Completion Year...)

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# Implementation of DHARMA

The success of DHARMA particularly depends on its uptake by Dam Data Managers and Dam Health Engineers around the country (cf. page 2, the users of DHARMA) as they will be in charge of entering all the data. The implementation of the DHARMA application is therefore as important as its design and development.

The first two modules were launched in May 2016 then, the team of designers, which gathers both software developing and civil engineering skills, started to perform training sessions around India in order to make the users familiar with the application.



DHARMA v1.0 was launched nationally in January 2018, during the previous International Dam Safety Conference in Trivandrum and following the successful migration of the National Register of Large Dams (NRLD) in 2017. Since then 24 trainings were held for 865 participants including 4 trainings in non-DRIP Sates (Rajasthan, Maharashtra & Gujarat). Thanks to these trainings sessions, today 600 people use DHARMA actively and 1546 dams are assigned (out of 5236 large dams in India).

The trainings take place in the State Capitals, they are arranged by the Implementing Agencies which are part of the Dam Rehabilitation and Improvement Project (DRIP). Participants of the trainings (ranging from 30 to 90 for



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each session) receive hands-on sessions for each module and tool, interactive quizzes and presentations on the purpose and benefits of DHARMA.

The version 2.0 of DHARMA is to be implemented by December 2020. This version is currently under design and is likely to consist of 4 additional "sub-modules" and 3 additional tools.



Figure 9: Status of data entry Agency-wise

Here is a list of all Implementing Agencies already using DHARMA:

	Implementing Agencies	Dams assigned to agency	Dams with entered data	Total Users
	Odisha Water Resources Department	204	182	204
	Karnataka Water Resources Department	231	184	122
	Tamil Nadu Water Resources Department	84	84	91
	Madhya Pradesh Water Resources Opt	887	42	85
Agencies in DRIP	Kerala Water Resources Department	20	20	63
	Uttarakhand Jal Vidyut Nigam Limited	6	4	33
	Kerala State Electricity Board	36	36	25
	Tamil Nadu Elec Gen & Distrib Corp	38	38	15
	Damodar Valley Corporation	4	4	8
	Rajasthan Water Resources Department	211	131	90
	Maharashtra Water Resources Department	2354	60	49
	Gujarat Engineering Research Institute	631	21	31
	Punjab Water Resources Department	15	14	16
	Bhakra Beas Management Board	4	4	7
	Uttar Pradesh Irrigation and WRD	133	1	3
	National Hydroelectric Power Corporation	22	22	3
Agencies not	Bihar Water Resources Department	26	1	3
In DRIP	Meghalaya Power Gen Corp Limited	7	-	2
	Narmada Hydroelec Dvpt Corporation Ltd			2
	Telangana Irrigation and CAD Department	174		2
	Himachal Pradesh State Electricity Board	2		2
	Karnataka Engineering Research Station			2
	Chhattisgarh Water Resources Department	258		L.
	Goa Water Resources Department	8		1
	Jammu and Kashmir Water Resources Dpt	1		1
-		And Personne in Concession, Name	And Designed and	and a second



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#### Who can I contact to know more?

This is the fourth information bulletin on DHARMA. Development of updated versions of DHARMA and implementation of the software will continue to be taken up in a phased manner under the guidance of the DHARMA Development Group (D3G) and DHARMA Implementation Group (DIG). All DRIP dams are expected to be incorporated into DHARMA before the completion of DRIP.

In the meantime, further information on the Dam Rehabilitation and Improvement Project (DRIP) can be found at www.damsafety.in. For further information on DHARMA, please also visit our dedicated website 'damsafety.in/dharma.' where you can download the latest User Manual.

For any other queries, the DHARMA team can be contacted through the details provided below.

For further information please contact: Project Director, DRIP and DSR Director, Central Water Commission 3rd Floor, New Library Building, R.K. Puram, New Delhi—110066 Telefax: +91-11-26192633 Email: dir-drip-cwc@nic.in Website: www.damsafety.in





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# Part-8 **Health Status of Gated Dam** (As per Mechanical Organisation)

#### Part-8 Status report of Gated Dams in Marathwada region (including Private Dams )

#### 8.1 General

As per GR.NO.ID/1078/23/8/IMP/2 Dtd.10/09/1980, Dam Safety Organization has been established by Government of Maharashtra for effective monitoring the safety aspects of dam.

As per Maharashtra Government Guidelines and regulation, Chief Engineer (Mechanical), Water Resources Dept. Nashik assigned Dams gate Inspection work to Superintending Engineer, Mechanical Circle, Nashik to assure proper operation and maintenance of Dam gates

Under Superintending Engineer, Mechanical Circle, Nashik Executive Engineer, Inspection unit , Aurangabad and Executive Engineer, Sluice Gate Mfg. Division, Dapodi , Pune are looking after all the inspection works.

Division offices Conduct all pre monsoon & Post Monsoon Gate Inspection work of Government, Semi Government, & Private Dams and send Reports to related authorities for same.

After Inspection work the observed points or deficiencies are classified into various categories as given below.

Def. Category 1	Dams with Major Deficiencies which may lead to dam failure	Very Serious Defects
Def. Category 2 (2 A)& (2B)	Dams with rectifiable Deficiencies needs	Serious Defects (2A)
(211)& (20)	immediate attention	Require immediate attention (2B)
Def. Category 3	General Defects	General Defects

In the year of 2019 pre and post monsoon inspection of total 48 gated dams have been carried out by Mechanical Organisation. It is to be noted that Chief engineer (Mechanical) W.R.D Nashik, prepares independently the detail Health status Report of all the gated dams inspected by mechanical organisation. This report is published and submitted to WRD and circulated to all Concern Chief Engineers.

In this Health Status Report, The details received vide e-mail dated 29th April 2021 from SE, Mechanical Circle, Nashik office dated are included. only the dam wise number of deficiencies noted by mechanical organisation are given in this part of AHSR. For details regarding the actual deficiencies Health Status Report circulated by Mechanical Organisation shall be referred.

#### 8.2 Overall Health Statues of Gated Dams

33 Class-I gated dams in the Marathwada region were inspected by Mechanical Organisation Category -1 deficiency is not observed on any dam. Category -2 deficiencies are observed in 27 dams and Category-3 deficiencies are observed in 33 dams. Total 567 Category -2 deficiencies and 2456 Category -3 deficiencies are observed on the dams in the region.

17 Class-II gated dams in the Marathwada region were inspected by Mechanical Organisation

Category -1 deficiency is not observed on any dam .Category -2 deficiencies are observed in 07 dams and Category-3 deficiencies are observed on all the 14 dams. Total 114 Category -2 deficiencies and 528 Category -3 deficiencies are observed on the dams in the region.

#### Table 8.1 Status of Deficiencies

Sr.	Region & Name of Dam	Dam Class - I							
		Defficiencies							
		2020-21 2021-22				Remarks			
		Cat-1	Cat-2 (2A)&(2B)	Cat-3	Cat-1	Cat-2 (2A)&(2B)	Cat-3		
1	2	3	4	5	6	7	8	9	
1	Jayakwadi	0	55	102	0	78	129		
2	Apegaon	0	18	43	0	19	44		
3	Mangrul	0	30	34	0	14	53		
4	Raja Takli	0	13	57	0	11	82		
5	Jogladevi	0	14	44	0	11	54		
6	Lonisawangi	0	21	103	0	12	118		
7	Bordahegaon	0	59	81	0	38	116		
8	Narangi	0	43	76	0	19	130		
9	Lower Dudhna	0	17	145	0	66	112		
10	Majalgaon	0	14	137	0	41	118		
11	Lower Terna	0	02	136	0	04	126		
12	Manjara	0	13	137	0	31	128		
13	Masalga	0	11	114	0	11	111		
14	Khulgapur Barrage	0	01	59	0	5	57		
15	Bindagihal Barrage	0	01	34	0	7	31		
16	Sai Barrage	0	2	58	0	22	59		
17	Takalgaon-Devla Barrage	0	2	42	0	9	40		

Sr.	Region & Name of Dam	Dam Class - I							
· NO		Deficiencies							
			2020-21			2021-22	Remarks		
		Cat-1	Cat-2 (2A)&(2B)	Cat-3	Cat-1	Cat-2 (2A)&(2B)	Cat-3		
1	2	3	4	5	6	7	8	9	
18	Shivni Barrage	0	1	52	0	09	56		
19	Hosur Barrage	0	0	34	0	02	32		
20	Gunjaraga Barrage	0	1	32	0	06	29		
21	Rajegaon Barrage	0	0	35	0	02	6		
22	Dhanegaon Barrage	0	0	60	0	02	68		
23	Karsa-Poharegaon Barrage	0	0	59	0	08	64		
24	ShivnaTakli	0	63	74	0	20	172		
25	Upper Manar	0	10	93	0	30	79		
26	Lower Manar	0	0	0	0	0	0	Not inspected	
27	Balegaon HL Barrage	0	0	0	0			Not inspected	
28	Vishnupuri	0	15	105	0	41	87		
29	Digras Barrage	0	0	44	0	09	48		
30	Babhali Barrage	0	0	29	0	02	35		
31	Amdura HL Barrage	0	0	0	0			Not inspected	
32	Isapur	0	0	0	0	0	0	Not in List of Dams Inspected by Mechanical Org	
33	Yeldari	0	17	118	0	38	100		
34	Siddheshwar	0	11	75	0	23	67		

Sr.	Region & Name of Dam	Dam Class - I						
		Deficiencies						
		2020-21				2021-22	Remarks	
		Cat-1	Cat-2 (2A)&(2B)	Cat-3	Cat-1	Cat-2 (2A)&(2B)	Cat-3	
1	2	3	4	5	6	7	8	9
35	Mudgal HL Barrage	0	1	52	0	10	48	
36	Dhalegaon HL Barrage	0	5	40	0	06	23	
37	Upper Kundalika	0	2	91	0	20	86	
	Total -	0	442	2395	0	567	2456	

Dam	Class	-	Π

Sr.	Region & Name of Dam	Dam Class - II						
No		Deficiencies						
			2020-21			2021-22		Remarks
		Cat-1	Cat-2 (2A)&(2B)	Cat-3	Cat-1	Cat-2 (2A)&(2B)	Cat-3	
1	2	3	4	5	6	7	8	9
<b>A) C</b>	hief Engineer, CADA, Aurangab	ad		1			I	
I) S.I	E & Admn, CADA, Aurangabad							
1) Ex	ecutive Engineer, AID, Auranga	abad						
1	AnjanaPalshi	0	31	80	0	29	85	
2	Purna Nevpur	0	21	58	0	07	69	
1) Ex	cecutive Engineer, NMID, Vaija	pur, Dist.	Aurangabad			I		I
3	Tembhapuri	0	22	50	0	03	56	
I) S.I	E & Admn, CADA, Latur	•	•	•			1	
1) Ex	ecutive Engineer, LID-1, Latur							
		0	0	0		0	0	Not inspected
4	lawarja	0	0	0	0	0	0	Not inspected
5 2) Ex	Bhusni Barrage Secutive Engineer, LID-2, Latur	0	0	0	0	0	0	1
	,,	0	0	0		0	0	Not inspected
0 2) Ex	cecutive Engineer, OID-1, Osma	inabad	0	0	0	0	0	
7	Terna	0	0	0	0	0	0	Not inspected
8	Chandani	0	0	0	0	0	0	Not inspected
3) Ex	cecutive Engineer, OID-2, Omer	rga	Ŭ	0	Ŭ	Ū	Ŭ	
9	Turori	0	0	0	0	0	0	Not inspected
.B) (	Chief Engineer, (WR), Aurangab	oad						
I) S.I	E, NIC, Nanded	NT						
1) Ex	South),	Nanded						
10	Kudala	0	0	48	0	02	46	
11		0	0	69	0	05	61	
12	Kundrala	0	0	43	0	05	38	
13	Pethvadaj	0	0	30	0	02	29	
14	Mahalingi	0	0	31	0	02	30	

Sr. No	Region & Name of Dam	Dam Class - II						
•		Deficiencies						
			2020-21			2021-22		Remarks
		Cat-1	Cat-2 (2A)&(2B)	Cat-3	Cat-1	Cat-2 (2A)&(2B)	Cat-3	
1	2	3	4	5	6	7	8	9
1) Ex	ecutive Engineer, NID (North),	Nanded					I	
15	Loni	0	0	21	0	04	18	
16	Nagzari	0	0	31	0	05	23	
17	Dongargaon	0	0	24	0	02	22	
2) Ex	ecutive Engineer, NID (South),	Nanded						
18	Mannar	0	0	0	0	13	66	
	Private Dams							
19	Harsul	0	13	7	0	0	0	Private
20	Kham	0	12	36	0	0	0	Private
21	Ghanewadi	0	20	21	0	0	0	Private
	Total -	0	149	682	0	114	628	

## LOWER MANAR

