

BUREAU OF INDIAN STANDARDS**AGENDA**

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| Hydraulic Gates & Valves Sectional Committee, WRD 12 | | 24th Meeting |
| Day, Date and Time | Venue | Contact details |
| Wednesday, 03 April 2024 11:00 AM | WEBEX PLATFORM | wrd@bis.gov.in |
| Chairman: Mr. M. K. Singh, GM (D&E), NHPC | | Member Secretary: Shri Vaibhav Yadav, Sc-B, WRD |

ITEM 0 WELCOME REMARKS OF THE CHAIRMAN**ITEM 1 CONFIRMATION OF THE MINUTES OF THE LAST MEETING**

The 23rd meeting of WRD 12 was held on 11 Aug 2023 and the minutes duly approved by the Chairperson were circulated to members. No comments have been received on the circulated minutes.

The committee may confirm the minutes as circulated.

ITEM 2 COMPOSITION OF WRD 12

2.1 The present composition and attendance details of the last three sectional committee meetings of WRD 12 are given at **ANNEX 1**.

2.2 In the last meeting, the committee was informed by Dr. K. S. Hari Prasad that Prof. R. P. Saini had passed away. Consequently, a request for a fresh nomination to the committee was sent to IIT Roorkee but no reply was received. The committee may note.

2.3 In the last meeting, the following suggestions were made for fresh nominations in the committee.

| S. No. | Member Organization | Suggestions in 23rd meeting | Status |
|---------------|--|--|------------------|
| 1 | Tehri Hydro Development Corporation Limited | NHPC suggested that they communicate with Tehri Hydro Development Corporation Limited and provide the contact details to BIS. | Reply is awaited |
| 2 | Bekem Infra Projects Pvt Ltd., Hyderabad | Dr. V Surya Anantapantula from PES Engineers Private Limited, Hyderabad, suggested that he communicate with Bekem Infra Projects Pvt. Ltd., Hyderabad, and provide the contact details to BIS. | Reply is awaited |

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|----------|--------------------------------------|--|---|
| 3 | M/s GMW Private Limited | Shri Amit Ranjan from CWC suggested that he communicate with GMW Pvt. Ltd. Vadodara and provide the contact details to BIS. | Nomination have been received from M/s GMW Private Limited. |
| 4 | Butterfly Valve Manufacturers | Shri N Kannaiah Naidu suggested to the committee that he will provide the contact details of Butterfly valve manufacturers to BIS. | Reply is awaited |

The committee may note and decide.

2.4 In the last meeting, the committee asked the Member Secretary to contact the following organizations and ask for their contribution to the committee work.

1. Kwality Shutters Trichy, Tamil Nadu
2. AVG Valves Manufacturing
3. ANDRITZ Hydro
4. VAG-Valves India Pvt. Ltd
5. FOURESS Engineering Private Limited
6. VAAS Valves Manufacturers
7. Indian Valve Private Limited, Nasik, Maharashtra

In this regard, emails requesting nominations were sent to the following organizations:

1. Kwality Shutters Trichy, Tamil Nadu
2. ANDRITZ Hydro
3. VAG-Valves India Pvt. Ltd
4. FOURESS Engineering Private Limited
5. Indian Valve Private Limited, Nasik, Maharashtra

Replies are awaited.

The following organizations couldn't be contacted:

1. AVG Valves Manufacturing
2. VAAS Valves Manufacturers

The committee may note and decide.

2.5 The committee asked CEA to provide fresh nominations to the committee. The following nominations have been received from CEA:

| S. No. | Organization | Members |
|---------------|---|---|
| 1 | Central Electricity Authority, New Delhi | Primary: Shri Reetesh Tiwari, Deputy Director Alternate: Shri Shyam Singal, Assistant Director |

The committee may note.

The following fresh nominations have also been received from various member organizations:

| S. No. | Organization | Members |
|--------|--|--|
| 1 | Central Water & Power Research Station, Pune | Primary: Dr. K.C. Sahu, Scientist-C Alternate: Shri A.P Meshram, Scientist-B |
| 2 | Central Water Commission, New Delhi | Primary: Shri Amit Ranjan, Director, Gates E&NE Alternate: Shri Rahul Kumar Singh, Director, Gates NW&S |
| 3 | Water Resources Department, Maharashtra | Principle: Shri Patil Prakash R, Superintending Engineer, Gates Circle |
| 4 | R.M. Sinha & Co., Kolkata | Alternate: Shri Rudrajit Sinha |

2.5 The following organizations have sent a request for co-option to the Committee.

| S. No. | Organization | Members |
|--------|---|--|
| 1 | AFRY India Private Limited | Principle: Hari Swarup Saxena, Vice President (Tech)/Chief Technical Principal Alternate: Kamal Nayan, Senior Engineer, (Hydromechanical) |
| 2 | Swadeshi professional Solution & Services | Primary: T. Sudhakar, Dam Gate expert Alternate: G.S. Pravallika, General Manager – Electrical Engineer |
| 3 | M/S GMW Private Limited | Primary: Shri Onkar Singh Panesar, Chairman Alternate: Shri Arvinderpal Singh Panesar, Director |

The committee may note.

ITEM 3 PROGRAMME OF WORK

3.1 The Programme of work of the WRD 12 committee is given at **ANNEX 2**.

The committee may note.

3.2 Five-Yearly Review of Published Standards:

All Indian Standards shall be reviewed periodically, at least once in five years by the concerned Sectional Committee. The standards have been formulated by the technical committee and are now to be revalidated as national standards. Members have an obligation to participate in the review exercise. While reviewing a standard, a committee has the following five options available:

- i) **Reaffirmation:** Indicating the continuation of the current standard without change.
- ii) **Amendment and reaffirmation:** Indicating the continuation of the current standard with necessary changes to bring it up to date.
- iii) **Take up for revision:** Involving the routine procedure for a new project and reaffirming for the time being.
- iv) **Declaration of obsolescence:** Indicating by an amendment that the standard is not recommended for use in new equipment but needs to be retained to maintain existing equipment that is expected to have a long working life.
- v) **Withdrawal:** Indicating that the standard is no longer needed.

The following list of standards is due for review in 2024-25 and the committee may kindly review the standards:

| S. No. | IS No. | Title of Standard | Last Reaffirmation | Status |
|--------|-------------------------------|---|--------------------|---------------------|
| 1 | IS 10096 (Part 1/Sec 1): 2014 | Recommendations for Inspection, Testing and Maintenance of Radial Gates and their Hoists: Part 1 Inspection, Testing and Assembly at the Manufacturing Stage: Sec 1 Gates | Feb 2020 | Yet to be taken |
| 2 | IS 10096 (Part 1/Sec 2): 2014 | Recommendations for Inspection, testing and maintenance of radial gates and rope drum hoists: Part 1 inspection, testing and assembly at the manufacturing stage: Sec 2 rope drum hoists (First Revision) | Jun 2019 | Yet to be taken |
| 3 | IS 10096 (Part 2): 1983 | Recommendations for inspection, testing and maintenance of radial gates and their hoists: Part 2 inspection, testing and assembly at the time of erection | Mar 2020 | Yet to be taken |
| 4 | IS 11793: 1986 | Guidelines for design of float driven hoisting mechanism for automatic gated control | Mar 2020 | See agenda item 3.4 |
| 5 | IS 4410 (Part 16/Sec 2): 1981 | Glossary of terms relating to river valley projects: Part xvi gates and valves: Sec 2 valves | Feb 2020 | See agenda item 3.4 |

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|---|----------------|---|----------|---------------------|
| 6 | IS 6938: 2005 | Design of rope drum and chain hoists for hydraulic gates - Code of practice (Second Revision) | Feb 2020 | Yet to be taken |
| 7 | IS 9349: 2006 | Recommendations for structural design of medium and high head slide gates (Second Revision) | Mar 2020 | See agenda item 4.1 |
| 8 | IS 13591: 2019 | Criteria for design of lifting beams (First Revision) | Aug 2019 | Yet to be taken |
| 9 | IS 5620: 2020 | Recommendations for Structural Design Criteria for Low Head Slide Gates (Third Revision) | Feb 2020 | Yet to be taken |

The committee may note and decide.

3.3 Review of Pre-2000 Standards

As decided by the committee in the last meeting, the following standards were circulated to all the committee members for comments vide BIS email dated 8 Nov 2023. No comments have been received on the documents.

The committee may decide upon the standards that may be archived.

| S. No. | IS No. | Title | Last Reaffirm |
|--------|----------------------|--|---------------|
| 1 | IS 7326 Part 1: 1992 | Penstock and turbine inlet butterfly valves for hydro Power Stations and systems Part 1 criteria for structural and hydraulic design | Mar 2018 |
| 2 | IS 7326 Part 2: 1992 | Penstock and turbine inlet butterfly valves for hydro - Power Stations and systems Part 2 guidelines for design and selection of control equipment | Mar 2018 |
| 3 | IS 7332 Part 1: 1991 | Spherical valves for hydro Power Stations and systems Part 1 criteria for structural and hydraulic design | Mar 2018 |
| 4 | IS 7332 Part 2: 1993 | Spherical valves for hydro Power Stations and systems Part 2 selection of control equipment | Mar 2018 |
| 5 | IS 7332 Part 3: 1994 | Spherical valves for hydro Power Stations and systems Part 3 recommendations for operation and maintenance of spherical valves | Mar 2018 |
| 6 | IS 13623: 1993 | Criteria for choice of gates and hoists | Mar 2018 |

The committee may note and decide.

3.4 In the last meeting, the committee allotted the following standards to members as listed below and requested all the concerned members to submit their inputs. The status of the documents is provided below.

| S. No | IS No. | Title | Standards allotted to the organizations | Decision of the Committee in 23 rd meeting | Status |
|-------|---------------------------------|---|---|--|---|
| 1 | IS 4410 (Part 16 / Sec 1): 1999 | Glossary of Terms Relating to River Valley Projects - Part 16 Gates and Valves - Section 1 Gates and Terms Related with Gates | CWC and NHPC are requested to provide the inputs on the document by Mar 2023. | CWC informed that they will submit their inputs by September 2023 after further discussions with NHPC. | Inputs are awaited |
| 2 | IS 4410 (Part 16 / Sec 2): 1981 | Glossary of terms relating to river valley projects Part 16 Gates and valves Section 2 Valves | | | Inputs are awaited |
| 3 | IS 4410 (Part 23): 1999 | Glossary of terms relating to river valley projects Part 23 Hoist, Cranes, and other related terms | | | Inputs are awaited |
| 4 | IS 10210: 1993 | Criteria for Design of hydraulic hoists for gates | CWC agreed to provide the inputs on the document. | CWC informed that they will submit their inputs by September 2023. Dr. V. Surya Anantapantula suggested that he will share the inputs he has received with BIS and circulate among the Committee members. These inputs will be discussed in the next meeting. | Inputs are awaited. Some inputs have been received from Shri N. Kannaiah Naidu. The same are shared with the agenda. |
| 5 | IS 11793: 1986 | Guidelines for Design of Float-driven Hoisting Mechanism for Automatic Gated | Shri Abhaya Prasad Pattanaik, in personal capacity was | Shri Abhaya Prasad Pattanaik to provide inputs. | Inputs are awaited |

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| | | Control | agreed to provide Inputs on the document. | | |
| 6 | IS 7326: Part 3: 1976 | Penstock and turbine inlet butterfly valves for hydropower stations and systems Part 3 Recommendations for operations and maintenance | Texmaco Rail and engineering Ltd. was agreed to provide inputs on the document. | The Member Secretary informed the committee about the comments from Texmaco Rail and engineering Ltd. After deliberation in the Committee, it was decided that the received comments lack specificity in terms of referring to clauses. Consequently, the Committee requested the Member Secretary to reach out to Texmaco Rail and engineering Ltd. and ask for comments to be provided in reference to specific clauses. Once obtained, these comments will be circulated among the Committee members for review. So that, it can be discussed in the next meeting of the Sectional Committee. | Reply is awaited |
| 7 | IS 11855: 2017 | Design and Use of Rubber Seals for Hydraulic Gates - Recommendations Second Revision The document was revised in 2017 with amalgamation of IS 15466:2004. However, it is observed that 2017 version has been | BIS will prepare the document redrafting the standard in compliance to the format of a specification standard and place it in P-draft circulation to all the members for comments | Document to be circulated to members. | The draft is under preparation. Draft shall be circulated to the members as WC Draft for comments. |

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| | | updated as a 'guidelines' superseding a specification. At present one BIS license is operative under this standard and therefore the standard may be taken up for revision/amendment on priority. | | | |
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The committee may note and decide.

3.5 Mr. V. K. Gupta has shared some comments on IS 4622: 2020. In view of the comments, the document may be taken up for review. The Document incorporating the comments as received may be circulated as WC Draft.

3.6 Standards National Action Plan (2022 – 27)

3.6.1 In the last meeting, the committee decided to work on an NWIP on the "Quality Assurance Plan". The committee also constituted a working group for the same. The composition of the Working Group (WG 01) is as follows:

1. Shri N Kannaiah Naidu – Convener
2. R.M. Sinha & Co.
3. CWC
4. NHPC
5. Shri Manoj Kumar Sharma.

The meeting of the working group (WG 01) was organized by BIS on 12 Jan 2024. The draft of Model QAP was shared by NHPC and the same was circulated among members of WG for comments.

The Committee may note.

ITEM 4 FINALIZED DOCUMENTS (Under Printing)

4.1 IS 9349: 2006 Recommendations for Structural Design of Medium and High Head Slide Gates

{Earlier Doc. WRD 12 (11587)}

4.2 IS 4623: 2000 Recommendation for Structural Design of Radial Gates

{Earlier Doc. No. WRD 12(682)}

The above documents are in the printing stage. Both these documents were sent for the WRDC Chairperson's Approval. IS 9349: 2006 is still with the WRDC Chairperson and is under discussion. IS 4623: 2000 has been returned with some changes. The document with the comments is shared with the agenda. The document with all the changes incorporated may be circulated as WC for 3 months and thereafter may be finalized for printing.

The Committee may note.

ITEM 5 NEW SUBJECTS UNDER CONSIDERATION

5.1 Recommendations for Structural Design Criteria for Stoplogs

{Earlier Document WRD 12 (14342) P}

(Subject approved in 20th Division Council meeting)

In the last meeting, the committee deliberated on the status of the inputs that have been pending for a long time. The Committee further reconstituted a working group of the following members for the preparation of the draft document. The composition of the reconstituted Working Group (WG 02) is as follows:

1. Shri Aditya Mishra, CWC (Convener)
2. Shri Patil Prakash R, WRD Maharashtra
3. Shri Baboo Lal Tyagi, NHPC
4. Dr. V. Surya Anantapantula, P.E.S. Engg. P. Ltd,
5. Shri S. K. Sinha, RM Sinha & Co.
6. Shri Abhaya Pattanaik, Odisha Construction Corp. Ltd.
7. Shri V. K. Gupta, Jaypee Infra Ventures P. Ltd.

The meeting of the working group (WG 02) was organized by BIS on 29 Jan 2024. The draft document may be considered for P-Draft and be circulated to the members. The same is shared with the agenda.

The committee may note and decide.

5.2 Recommendations for Structural Design of Adit Gates

(Approval of subject in 20th Division Council meeting)

In the last meeting, Dr. V. Surya Anantapantula informed the committee that the document is still under preparation. He assured the committee that he would provide the draft with the help of CWC and NHPC within six months or before the next meeting so that it could be discussed in the next meeting. In this regard, the draft document was requested vide BIS email.

The draft is still awaited.

The Committee may note and decide.

ITEM 6 NEW SUBJECTS FOR STANDARDIZATION

In the last meeting, the committee allotted the standards to the following members listed below and requested the allocated members to submit their inputs. In this regard, emails were sent to all the members via BIS email. The status of the documents is provided below.

| S. No. | New Subjects for Standardization | Decision of the Committee in the 23 rd meeting | Status |
|--------|----------------------------------|---|---|
| 1 | Design of lock gates | Shri N Kannaiah Naidu informed that he has prepared the technical inputs related to the | Inputs received from Shri N Kannaiah vide email dated 17 Aug 2023 are shared with the |

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| | | design of lock gates. He said that he will provide these inputs to BIS. Shri S. K. Sinha also agreed to provide inputs for the same. | agenda. |
| 2 | Automation of radial gates | Shri V. K. Gupta informed that he has prepared basic inputs related to Automation of radial gates and he will submit a draft document to BIS so that the committee can deliberate in the next meeting. Shri Patil Prakash R (MERI) also agreed to provide his inputs. | Inputs are awaited. A request for constitution of a Sub-committee for Automation and SCADA System for Hydraulic Gates and Valves has been received from R. M. Sinha & Co. The request letter has been shared with the agenda. |

A document regarding the specifications of Flume Gates was received from Shri Amit Ranjan. The document has been shared with the agenda. The committee may decide to take up the subject for standardization.

The committee may note and decide.

ITEM 7 R&D PROJECTS FOR FORMULATION AND REVIEW OF STANDARDS

BIS has realized the indispensable role of research and development (R&D) projects in the standardization process. Hence, BIS has started a scheme of awarding R&D projects for standards formulation. The guidelines for the same have been circulated with the agenda.

The Committee may note.

ITEM 8 ANY OTHER BUSINESS

8.1 An email was received inquiring about clarification with regards to clause 6.10.2 of IS 4623:2000.

“The trunnion pin may be solid or hollow and shall be designed against bending for the total load transferred through the trunnion hub.”

“Please clarify whether this total load is only the resultant hydrostatic force or includes the weight of the gate with end arms and frictional forces due to bottom and side seals, sill reaction, and wire rope tension whenever applicable.”

ANNEX 1

COMPOSITION OF HYDRAULIC GATES & VALVES SECTIONAL COMMITTEE, WRD 12

| Last 3 meetings | | 21 st Meeting – 28 Mar 2022 | 22 nd Meeting – 3 Feb 2023 | 23 rd Meeting – 11 Aug 2023 | | |
|-----------------|---|---|---------------------------------------|--|------------------|--|
| S. No. | Name of the Organization | Represented by | Meetings Attended | | | |
| | | | 21 st | 22 nd | 23 rd | |
| 1 | National Hydroelectric Power Corporation Limited, Faridabad | Chairman: Sh. M. K. Singh, General Manager | Y | Y | Y | |
| 2 | Bhakra Beas Management Board, Punjab | Primary: Shri K. K. Sood, (Designation) Alternate: Shri Gurbal Singh, Executive Engineer, Mech. Division | Y | Y | Y | |
| 3 | Bharat Heavy Electricals Ltd., Bhopal | Primary: Shri Harish Kumar, Senior Manager (Design) Alternate: Shri Mohd. Waliullah, Manager (Design) | Y | Y | Y | |
| 4 | Central Electricity Authority, New Delhi | Primary: Shri. Reetesh Tiwari, Deputy Director Alternate: Shri Shyam Singal, Assistant Director | X | X | Y | |
| 5 | Central Water & Power Research Station, Pune | Primary: Dr. K.C. Sahu, Scientist-C Alternate: Shri A.P Meshram, Scientist-B | Y | Y | Y | |
| 6 | Central Water Commission, New Delhi | Primary: Shri Amit Ranjan, Director, Gates (E&NE) Alternate: Shri Rahul Kumar Singh, Deputy Director (Gates, E&NE) | Y | Y | Y | |

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|----|---|---|---|---|---|
| 7 | Himachal Pradesh Power Corporation Ltd., Mandi | <p>Primary: Shri R. K. Kaundal, General Manager (Designs)</p> <p>Alternate: Shri Rajendra Singh, Additional General Manager</p> | Y | Y | X |
| 8 | Indian Institute of Technology Roorkee, Roorkee | <p>Primary: (Not Nominated)</p> <p>Alternate: Dr. K S Hari Prasad, CED</p> | Y | Y | Y |
| 9 | Irrigation Research Institute, Roorkee | <p>Primary: (Name), Chief Engineer (Design)</p> <p>Alternate: Shri Naveen Singhal Superintending Engineer</p> <p>Alternate: Shri Sharad Kumar, Assistant Engineer</p> | Y | X | Y |
| 10 | Jaypee Infra Ventures, Noida | <p>Primary: Shri V K Gupta, (Designation)</p> <p>Alternate: (Not Nominated)</p> | Y | Y | Y |
| 11 | M/S Precision Infratech Ltd, Ahmedabad | <p>Primary: Shri Nalin Vibhakar, Director</p> <p>Alternate: Shri Dheeraj Vania, Manager Design</p> | X | Y | Y |
| 12 | National Hydroelectric Power Corporation Ltd, Faridabad | <p>Primary: Sh. Rajesh Kumar, DGM (Civil)</p> <p>Alternate: Sh. Baboo Lal Tyagi, DGM (Civil)</p> <p>Alternate: Shri Punit Masiwal, DM (Mech.)</p> | Y | Y | Y |
| 13 | National Thermal Power Corporation Ltd., New Delhi | <p>Primary: Shri Naveen Chandra Pant, Deputy General Manager (P.E. Mech)</p> <p>Alternate: Sh. Sujeet Kumar, Senior Manager (P.E. Mech)</p> | Y | Y | Y |
| 14 | P.E.S. Engineers(P) Ltd, Hyderabad | <p>Primary: Shri SVSS Raju, (Designation)</p> | Y | Y | Y |

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|----|--|--|---|---|---|
| | | Alternate: Dr. V Surya Anantapantula, (Designation) | | | |
| 15 | R.M. Sinha & Co., Kolkata | Primary: Shri Sanjit Kumar Sinha, (Designation) Alternate: Shri Rudrajit Sinha, (Designation) | X | Y | Y |
| 16 | Satluj Jal Vidyut Nigam Limited, Shimla | Primary: Shri Anish Kumar Sharma, Senior Manager Alternate: (Not Nominated) | Y | Y | Y |
| 17 | Texmaco Ltd, Kolkata | Primary: Dr. Mukulesh Debnath, Vice President (Structural) Alternate: Shri Chandan Ranjan Goswami, DGM (Design) HME | X | Y | Y |
| 18 | Water Resources Department, Maharashtra | Primary: Shri Patil Prakash R, Superintending Engineer (Gates Circle) Alternate: Shri Waghmare Shashikant V, Executive Engineer (Gates Circle) (Division No. 4) | Y | Y | Y |
| 19 | Water Resources Department, Odisha | Primary: Shri Debi Prasad Pattnaik, GM (Mech), Erection & Maintenance Alternate: Shri Manoj Kumar Sharma, Senior Manager (Mechanical), Mechanical Designs | Y | X | Y |
| 20 | In Personal Capacity, Bhubaneshwar | Shri Abhay Prasad Pattanaik | Y | Y | Y |
| 21 | In Personal Capacity, Hyderabad | Shri N Kannaiah Naidu | X | Y | Y |
| 22 | In Personal Capacity, Solan | Prof. Gopal Chauhan | Y | Y | X |

ANNEX 2

PROGRAMME OF WORK

SCOPE: Standardization of criteria for selection, design, construction, maintenance, operation, and testing of gates and valves.

STANDARDS PUBLISHED

| S. No. | IS No. | Title | Reaffirm | No. of Amds |
|--------|-------------------------------|---|----------|-------------|
| 1. | IS 10021: 2000 | Guidelines for de - icing System for Hydraulic Installations (First Revision) | Mar 2023 | - |
| 2. | IS 10096 (Part 1/Sec 1): 2014 | Recommendations for Inspection, Testing and Maintenance of Radial Gates and their Hoists: Part 1 Inspection, Testing and Assembly at the Manufacturing Stage: Sec 1 Gates | Feb 2020 | - |
| 3. | IS 10096 (Part 1/Sec 2): 2014 | Recommendations for Inspection, Testing and Maintenance of Radial Gates and Rope Drum Hoists: Part 1 Inspection, Testing and Assembly at the Manufacturing Stage: Sec 2 Rope Drum Hoists (First Revision) | Jun 2019 | - |
| 4. | IS 10096 (Part 2): 1983 | Recommendations for Inspection, Testing and Maintenance of Radial Gates and their Hoists: Part 2 Inspection, Testing and Assembly at the Time of Erection | Mar 2020 | 2 |
| 5. | IS 10096 (Part 3): 2002 | Recommendations for Inspection, Testing and Maintenance of Radial Gates and Rope Drum Hoists: Part 3 After Erection (Second Revision) | Mar 2023 | 1 |
| 6. | IS 10210: 1993 | Criteria for Design of Hydraulic Hoists for Gates (First Revision) | Mar 2023 | 1 |
| 7. | IS 11228: 2023 | Recommendations for Design of Screw Hoists for Hydraulic Gates (First Revision) | | - |
| 8. | IS 11793: 1986 | Guidelines for Design of Float Driven Hoisting Mechanism for Automatic Gated Control | Mar 2020 | - |
| 9. | IS 11855: 2017 | Design and Use of Rubber Seals for Hydraulic Gates - Recommendations (Second Revision) | Jul 2022 | - |
| 10. | IS 13041: 2013 | Recommendations for Inspection, Testing and Maintenance of Hydraulic Hoist (After | Mar 2023 | - |

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| | | Erection) (First Revision) | | |
| 11. | IS 13591: 2019 | Criteria for Design of Lifting Beams (First Revision) | Aug 2019 | - |
| 12. | IS 13623: 1993 | Criteria for Choice of Gates and Hoists | Mar 2023 | 1 |
| 13. | IS 14177: 2023 | Painting System for Hydraulic Gates and Hoists – Guidelines First Revision | | - |
| 14. | IS 4410 (Part 16/Sec 1): 1999 | Glossary of Terms Relating to River Valley Projects: Part 16 Gates and Valves: Sec 1 Gates and Terms Related with Gates (First Revision) | Mar 2023 | - |
| 15. | IS 4410 (Part 16/Sec 2): 1981 | Glossary of Terms Relating to River Valley Projects: Part 16 Gates and Valves: Sec 2 Valves | Feb 2020 | - |
| 16. | IS 4410 (Part 23): 1999 | Glossary of Terms Relating to River Valley Projects | Mar 2023 | - |
| 17. | IS 4622: 2020 | Recommendations for Structural Design of Fixed-Wheel Gates (Fourth Revision) | Dec 2020 | - |
| 18. | IS 4623: 2000 | Recommendations for Structural Design of Radial Gates (Third Revision) | Mar 2019 | - |
| 19. | IS 5620: 2020 | Recommendations for Structural Design Criteria for Low Head Slide Gates (Third Revision) | Feb 2020 | - |
| 20. | IS 6938: 2005 | Design of Rope Drum and Chain Hoists for Hydraulic Gates - Code of Practice (Second Revision) | Feb 2020 | 2 |
| 21. | IS 7326 (Part 1): 1992 | Penstock and Turbine Inlet Butterfly Valves for Hydropower Stations and Systems: Part 1 Criteria for Structural and Hydraulic Design (First Revision) | Mar 2023 | - |
| 22. | IS 7326 (Part 2): 1992 | Penstock and Turbine Inlet Butterfly Valves for Hydropower Stations and Systems: Part 2 Guidelines for Design and Selection of Control | Mar 2023 | - |
| 23. | IS 7326 (Part 3): 1976 | Penstock and Turbine Inlet Butterfly Valves for Hydropower Stations and Systems: Part 3 Recommendations for Operations and Maintenance | Mar 2023 | - |
| 24. | IS 7332 (Part 1): 1991 | Spherical Valves for Hydropower Stations and Systems: Part 1 Criteria for Structural and Hydraulic Design (First Revision) | Mar 2023 | 1 |

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| 25. | IS 7332 (Part 2): 1993 | Spherical Valves for Hydropower Stations and Systems: Part 2 Selection of Control Equipment (First Revision) | Mar 2023 | - |
| 26. | IS 7332 (Part 3): 1994 | Spherical Valves for Hydropower Stations and Systems: Part 3 Recommendations for Operation and Maintenance of Spherical Valves (First Revision) | Mar 2023 | - |
| 27. | IS 7718: 2018 | Recommendations for Inspection, Testing and Maintenance of Fixed Wheel and Slide Gate (Second Revision) | Jan 2023 | - |
| 28. | IS 9349: 2006 | Recommendations for Structural Design of Medium and High Head Slide Gates (Second Revision) | Mar 2020 | - |