




Bangladesh Power Development Board
INTEGRATED MANAGEMENT SYSTEM
(BASED ON ISO 9001:2015, ISO 14001:2015 & ISO 45001:2018
STANDARDS)

PROCEDURE FOR WATER AND STEAM CYCLE

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|  | INTEGRATED MANAGEMENT SYSTEM | Document No.: BPDB-IMS-PR-061 |
| | PROCEDURE FOR WATER AND STEAM CYCLE | Revision No.: 00 Revision Date: 01-11-2021 Page No: Page 2 of 5 |

1. Purpose

The Purpose of this document is –

- To define the responsibility and action with regard to the execution of a particular task as described.
- To be used as a guideline for the controlling the water and steam quality.
- For maintaining water and steam quality up to requirements.

2. Scope

This procedure applies to all workers including staff, clients, contractors and others of BPDB

3. Terms and Definitions

None

Abbreviations

BPDB – Bangladesh Power Development Board

4. Roles and Responsibilities

- **The operation manager**

Is responsible for the implementation of work to be done.

- **The shift charge Engineer**

Is responsible for ensuring that the task to be carried out by his operation


- **Technician**

Is in the manner described herein.

- **The BOP engineer and plant chemist**

Are responsible for carrying out the task according to the manner described herein.

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| Prepared By | | Approved By | |
| Reviewed By | | | |

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5. Procedure (Details of Water Quality Management)

A. Demineralize Water

| No. | OPERATIN PARAMETERS | |
|-----|---------------------|-----------------------|
| 1 | Reactive Silica | <5 ppb |
| 2 | Conductivity | <0.2 micro siemens/cm |
| 3 | Sodium | 5 ppb |
| 4 | Chlorine | 5 ppb |
| 5 | Iron | 10 ppb |
| 6 | Copper | 3 ppb |

1. Demineralized water quality is controlled at demineralize plant
2. Demineralized plant outlets are monitored by online meter
3. If the reading is off specification regeneration is required

B. Cooling Water

| pH | Cond | Nitrite | Iron | SG |
|--------|------------|------------|-------|-------|
| 8.5-11 | <2500uS/cm | 300-800ppm | <3ppm | >1.05 |

1. Cooling water quality is maintained by Naico team and continuous monitoring is done
2. Based on the lab report water quality is monitored.
3. Based on the lab report necessary dosing will be done.

C. Raw Water

1. Raw water quality is monitored by online and lab report.

D. Boiler Feed Water

| pH | Cond/Portable | Silica | Elimin-ox | Iron | DO |
|---------|---------------|----------|-------------|--------|--------|
| 8.5-9.2 | <5 uS/cm | <0.02ppm | 0.8-1.2 ppm | <10ppb | <10ppb |

1. Boiler feed water quality is monitored by online and lab report.
2. Based on lab report dosing will be adjusted.

E. Boiler Water

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| | | | |
|----------|---------------|-----------------|--------|
| pH | Cond/Portable | PO ₄ | Silica |
| 9.5-10.2 | <500uS/cm | 15-25 ppm | ppm |

1. Boiler feed water quality is monitored by online and lab report.
2. Based on lab report dosing will be adjusted.

F. River Water

| pH | Turbidity | TDS | Iron, fe ^{Hydrate} | TSS | Potassium, K | Sodium, Na | Chloride | Sulphate | Dissolved Oxygen, O ₂ |
|-----------|--------------|--------------|-----------------------------|---------------|----------------|----------------|----------|---------------|----------------------------------|
| 6.95-7.64 | 16.3-309 NTU | 128-145 Mg/l | 0.73-0.97 Mg/l | 142-1221 Mg/l | 1.63-1.96 Mg/l | 3.37-10.7 Mg/l | NA | 2.08-6.2 Mg/l | 2.85-3.98 Mg/l |

1. Chemist monitors river water quality on every shift manually.

G. Boiler Steam

| pH | Cond | Silica LR | Iron | Copper | Potassium, | Sodium | Chloride | Sulphate | TOC |
|--------|------------|-----------|--------|--------|------------|--------|----------|----------|-----|
| 9.4-10 | <0.2 uS/cm | <20 PPB | <15ppb | <3ppb | <10ppb | <5ppb | NA | NA | NA |

1. Boiler steam quality is monitored by online and lab report.
2. Based on lab report dosing and blow down will be adjusted.

6. Reference

ISO 9001:2015 & ISO 14001:2015 Standards

7. Appendixes

None

8. Revision History

| SI No. | Revision Number | Section | Change Made | Date of Revision |
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