

APPENDIX D

Maintenance Standards for Generating Asset Owners

**MAINTENANCE STANDARDS
FOR
GENERATING ASSET OWNERS**

Maintenance Standards (MS) 1 through 18 apply to each covered generating asset. (See GO 167, §§ 3 and 7.) A separate document containing recommended guidelines may be obtained from the Commission's Consumer Protection and Safety Division (or successor entity). (See GO 167 § 15.2.) The guidelines are intended to assist each generating asset owner determine how it may comply with these MS.

1. MS 1 – Safety

The protection of life and limb for the work force is paramount. The company behavior ensures that individuals at all levels of the organization consider safety as the overriding priority. This is manifested in decisions and actions based on this priority. The work environment, and the policies and procedures foster such a safety culture, and the attitudes and behaviors of individuals are consistent with the policies and procedures.

2. MS 2 - Organizational Structure and Responsibilities

The organization with responsibility and accountability for establishing and implementing a maintenance strategy to support company objectives for reliable station operation is clearly defined, communicated, understood and is effectively implemented. Reporting relationships, control of resources, and individual authorities support and are clearly defined and commensurate with responsibilities.

3. MS 3 – Maintenance Management and Leadership

Maintenance managers establish high standards of performance and align the maintenance organization to effectively implement and control maintenance activities.

4. MS 4 – Problem Resolution and Continuing Improvement

The company values and fosters an environment of continuous improvement and timely and effective problem resolution.

5. MS 5 - Maintenance Personnel Knowledge and Skills

Maintenance personnel are trained and qualified to possess and apply the knowledge and skills needed to perform maintenance activities that support safe and reliable plant operation.

6. MS 6 - Training Support

A systematic approach to training is used to achieve, improve, and maintain a high level of personnel knowledge, skill, and performance.

7. MS 7 – Balance of Maintenance Approach

The maintenance program includes the proper balance of the various approaches to maintenance, e.g., preventive, predictive, or corrective. The approach is adequately documented with consideration of economics and reliability of equipment or components, and their affect on reliable operation of the unit. Operating experience is factored into the program. Maintenance procedures and documents should include the generation equipment and all those components owned by the generation owner directly connected to the plant that are an integral part of delivering power to the grid including fuel supply systems, electrical switchyards, transmissions lines, penstocks, flumes, exhaust system, etc.

8. MS 8 – Maintenance Procedures and Documentation

Maintenance procedures and documents are clear and technically accurate, provide appropriate direction, and are used to support safe and reliable plant operation. Procedures must be current to the actual methods being employed to accomplish the task and are comprehensive to ensure reliable energy delivery to the transmission grid.

9. MS 9 – Conduct of Maintenance

Maintenance is conducted in an effective and efficient manner so equipment performance and materiel condition effectively support reliable plant operation.

10. MS 10 – Work Management

Work is identified and selected based on value to maintaining reliable plant operation. Work is planned, scheduled, coordinated, controlled, and supported with resources for safe, timely, and effective completion.

11. MS 11 – Plant Status and Configuration

Station activities are effectively managed so plant status and configuration are maintained to support reliable and efficient operation.

12. MS 12 – Spare Parts, Material and Services

Correct parts and materials in good condition, are available for maintenance activities to support both forced and planned outages. Procurement of services and materials for outages are performed in time to ensure materials will be available without impact to the schedule. Storage of parts and materials support maintaining quality and shelf life of parts and materials.

13. MS 13 - Equipment Performance and Materiel Condition

Equipment performance and materiel condition support reliable plant operation. This is achieved using a strategy that includes methods to anticipate, prevent, identify, and promptly resolve equipment performance problems and degradation.

14. MS 14 – Engineering and Technical Support

Engineering activities are conducted such that equipment performance supports reliable plant operation. Engineering provides the technical information necessary for the plant to be operated and maintained within the operating parameters defined by plant design.

15. MS 15 – Chemistry Control

Chemistry controls optimize chemistry conditions during all phases of plant operation and system non-operational periods.

16. MS 16 – Regulatory Requirements

Regulatory compliance is paramount in the operation of the generating asset. Each regulatory event is properly identified, reported and appropriate action taken to prevent recurrence.

17. MS 17 – Equipment History

Maintenance standards or procedures clearly define requirements for equipment history for the systems and equipment, including, what information or data to collect, how to record data, and how the data is to be used.

18. MS 18 – Maintenance Facilities and Equipment

Facilities and equipment are adequate to effectively support maintenance activities.

(END OF APPENDIX D)