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REGION V 18E

Docket No. 50-508

June 28, 1985
G03-85-358

Mr. J. B. Martin
Regional Administrator
U. S. Nuclear Regulatory Commission
Region V
1450 Maria Lane, Suite 210
Walnut Creek, California 94596

Subject: NUCLEAR PROJECT NO. 3
READINESS REVIEW - PRESERVATION PROGRAM

References: 1) Meeting held in NRC office Region V on May 22, 1985.
2) Letter G03-85-283, A. D. Kohler to J. B. Martin, same subject, dated May 24, 1985.

As a result of our meeting at Region V (Reference 1), it was agreed that the first module of the Readiness Review Program at WNP-3 would be the Preservation Program. Accordingly, Reference 2 provided you with a copy of a program document, "Preservation of Assets - Preventive Maintenance Program (WMC-051)," for your review and approval. Subsequent discussions with your staff have disclosed the need for a document that contains a description of the programmatic controls for our Preservation Program.

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J. B. Martin, Regional Administrator

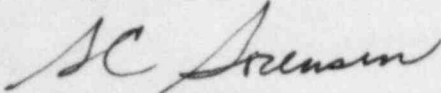
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This higher tier document is submitted for your review and approval.

Very truly yours,



G. C. Sorensen

Manager, Regulatory Programs

Attachment - WNP-3 Preventive Maintenance and Preservation Program

cc: Mr. J. A. Adams, NESCO
Mr. G. T. Ankrum, Nuclear Regulatory Commission
Ms. N. Bell, Nuclear Information & Resource Services
Mr. W. L. Bryan, Washington Water Power Company
Mr. H. R. Denton, Nuclear Regulatory Commission
Mr. R. T. Dodds, Nuclear Regulatory Commission
Mr. C. Eschels, EFSEC Chairman
Mr. W. M. Hill, Nuclear Regulatory Commission
Mr. G. W. Knighton, Nuclear Regulatory Commission
Mr. J. R. Lewis, Bonneville Power Administration
Mr. F. J. Miraglia, Nuclear Regulatory Commission
Mr. R. V. Myers, Puget Sound Power & Light Company
Mr. N. S. Reynolds (Bishop, Liberman, Cook, Purcell & Reynolds)
Mr. E. Rosolie, Director of Coalition for Safe Power
Mr. B. K. Singh, Nuclear Regulatory Commission
Mr. J. M. Taylor, Nuclear Regulatory Commission
Mr. L. D. Weislogel, Pacific Power & Light Company
Mr. B. D. Withers, Portland General Electric Company

SUPPLY SYSTEM WNP-3 PREVENTIVE MAINTENANCE AND PRESERVATION PROGRAM

PURPOSE

The purpose of the Preservation Program is to ensure that permanent plant structures, systems, and components, particularly those that are safety-related and those that represent large economic investments, are preserved and maintained in conjunction with the required records, such that plant licensability is retained and economic risk is minimized, commensurate with the Supply System mission.

PROGRAM POLICY

The Preventive Maintenance and Preservation Program at the WNP-3 project falls under the Quality Assurance Program Descriptions which are in Chapter 17 of the FSAR.

Elements of both the Design/Construction Quality Assurance and the Operational Quality Assurance Programs apply to the Preventive Maintenance Program. Details of this program, as implemented on the WNP-3 project, are described below.

ORGANIZATION

The Program Director has overall responsibility for the program. This is accomplished through the management and direction of the Architect Engineer, Construction Management organization (Ebasco) and Supply System personnel. In the absence of the Program Director, the Deputy Program Director is delegated these responsibilities.

Supply System site Department Managers provide technical support to the Program Director and exercise control of Ebasco activities within their area of responsibility by overview of the corresponding Ebasco group.

The organization chart (Chart 1) depicts an organization that has the major responsibilities for performing preventive maintenance and preservation at the Supply System. Managers that have major Owner overview roles are the Assistant Program Director, Engineering and the WNP-3 Construction Manager.

The Ebasco Project General Manager is assigned overall responsibility for Ebasco Preventive Maintenance activities. The Ebasco Construction Manager, with technical input from the Ebasco Architect Engineer, is responsible for the establishment of specific equipment maintenance instructions and requirements.

The Assistant Program Director, Engineering (APDE) exercises the normal Owners overview role of the activities of the Architect Engineers as it relates to design and preservation. The APDE makes technical contributions to the Preventive Maintenance and Preservation Program, subject to concurrence of the AE.

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Both the Supply System and Ebasco are involved in the performance of preventive/corrective maintenance tasks in accordance with the requirements established by the Construction Manager. The Ebasco Construction Manager is responsible for the maintenance of warehoused equipment. The Supply System Plant Manager, through the Maintenance Manager, is responsible for the maintenance of installed equipment.

Preventive/corrective maintenance of components and/or systems which have been provisionally accepted or early released by the Supply System is performed by the Maintenance Manager in accordance with the Supply System Test and Startup Program. Technical support is the responsibility of the Technical Manager.

Supply System and Ebasco Quality Assurance periodically survey and audit implementation of the program. Supply System Operational Quality Assurance monitors maintenance performed by the Maintenance Manager. Ebasco Quality Assurance monitors maintenance performed in accordance with the requirements established by the Construction Manager. Supply System Project Quality Assurance reviews Ebasco Quality Assurance activities and monitors maintenance performed by the Construction Manager.

PREVENTIVE MAINTENANCE REQUIREMENTS

Preventive maintenance requirements and specific instructions and procedures for maintenance are developed by taking into account manufacturer's recommendations; industry experience, regulatory, military and industry standards; and other appropriate sources of information. Evaluations of source information and development into requirements will be appropriately documented.

Preventive maintenance activities are conducted using procedures that have been reviewed and approved by the Engineering Group having cognizance over the equipment (see Organization Chart). The review/approval process assures that the specific maintenance requirements have been incorporated into the procedures.

- Monitoring

Important preservation elements are the assumptions with regard to corrosion, therefore, a corrosion monitoring program (see later in this discussion), is provided to confirm the adequacy of the corrosion-prevention requirements. Periodic corrosion assessments are performed and trending techniques applied to the results of the assessments.

- Changes to Maintenance Requirements

As results of the corrosion and other monitoring programs are analyzed, appropriate changes to maintenance requirements will be implemented. All changes to requirements will be approved by the Cognizant Engineering organization before use, and added to the maintenance program.

SUPPLY SYSTEM

EBASCO

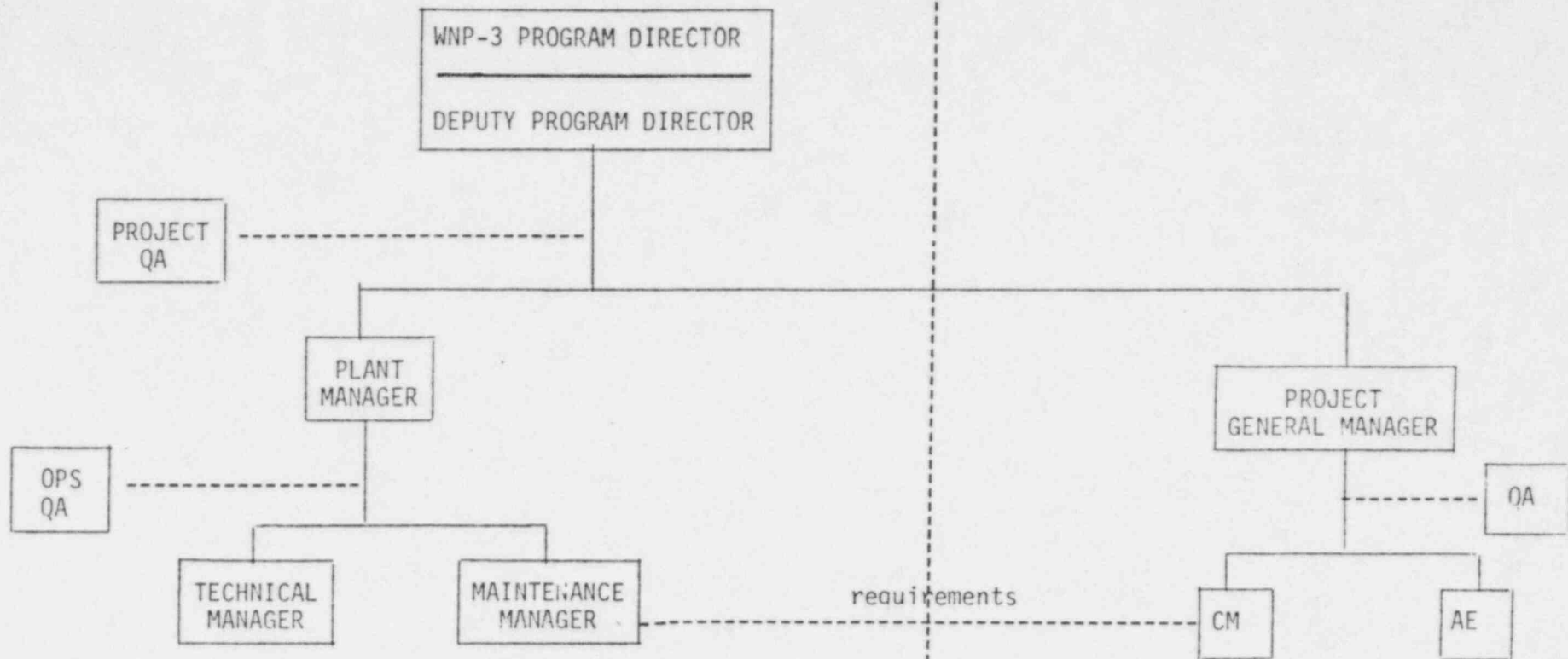


CHART 1

- WMC-051

The Supply System, with Ebasco, developed a program document that provides the basic requirements for the maintenance of general classes of equipment. This program document, "Preservation of Assets - Preventive Maintenance Program (WMC-051)", is attached and is a lower tier part of the overall Supply System Preventive Maintenance and Preservation Program. The appendices to WMC-051 set basic minimum requirements that will be reviewed as experience from the various monitoring programs is gained and as the results of the preventive maintenance history are analyzed. Changes will be made only with the approval of the Cognizant Engineering organization.

PROCEDURE/INSTRUCTION AND DRAWING CONTROL

All procedures, instructions and drawings used for preventive maintenance and preservation are controlled in accordance with the descriptions in Chapter 17 of the FSAR.

PROCUREMENT

Procurement of items and materials to be used in the Preventive Maintenance and Preservation Program are controlled as described in Chapter 17 of the FSAR.

DOCUMENT CONTROL AND CONTROL OF MEASURING AND TEST EQUIPMENT

These activities are controlled as described in Chapter 17 of the FSAR.

PREVENTIVE MAINTENANCE PROGRAM ADMINISTRATION

Following approval of the specific maintenance procedures and instructions, the requirements are entered into the Project Computer Systems.

Computer Systems

All material and equipment on the Project is tracked by the Project Construction Commodity Control System (CCCS) utilizing commodity I.D. Maintenance of non-installed equipment is monitored by the CCCS and the Maintenance Records System; installed equipment is monitored under the Master Equipment List (MEL) and Scheduled Maintenance System (SMS).

- Master Equipment List (MEL)

MEL is the master data base and lists each component in the plant by Equipment Piece Number (EPN). Included in each EPN file are nameplate data such as manufacturer, model, serial number, location, etc., and the quality class of the item.

- Scheduled Maintenance System (SMS)

SMS is the system which controls all preventive maintenance activities. This system schedules all PM activities, generates hard copy task cards for performance of the activity and provides various reports.

- Maintenance Work Request (MWR) System

MWR is the system which files all corrective maintenance activities. This system shows all open or completed work and provides for interim status, such as in-progress or awaiting parts, etc.

- Equipment History (EQH) System

EQH is the system which files all completed work performed under the SMS and MWR systems.

- General

All computer systems are interactive and information may be obtained by EPN, system, total plant, area, or by more than 30 different fields in the common data base.

Preventive Maintenance (PM)

PM is the activities which inspect, monitor, surveil, or perform work to preserve equipment and/or systems. These activities include such items as visual checks, shaft rotations, insulation resistance testing, instrument surveillance, application of internal and external preservatives, etc. The flow path for PM activities is as follows:

- Data Input

When the requirements for a component are determined, the PM activities and their frequencies are entered into the SMS system and verified.

- Work Performance

Prior to the required due date, the SMS system generates a hard card (task card) detailing the work to be performed for each EPN. The work may be simplistic in nature and be fully detailed on the task card, or require the use of detailed procedures. The task cards are reviewed by QA, indicated as to which ones will be part of the random surveillance program, and distributed to the work crews for implementation. The work is performed, any discrepancies noted, the task card and any associated documentation signed by the individual performing the work, and the card routed to the Supervisor for review and approval.

- Work Review

The Supervisor reviews the work performed for discrepancies, completeness, accuracy, adverse trends, etc. and signs the task card.

- Data Input

The completion date and any comments are entered into the SMS system for automatic rescheduling at the required frequency.

In the event that the last three completion dates will exceed the 125% criteria, the system automatically changes the due date to assure compliance.

- Files

The completion data is transferred and retained within the EQH system, which can provide reports of all activities. In addition, the completed task cards are retained in hard copy in the plant files.

- System Verification

Late reports are generated by the SMS system on a weekly basis and show any activity that is past its due date. These reports are reviewed and any discrepancies resolved.

Corrective Maintenance (CM)

CM is the activity which performs work to correct discrepancies in equipment and/or systems. These activities include such items as corrosion removal, instrument repair, protective enclosure repair, component overhaul, etc.

Minor items, such as replacement of contact preservatives, repair of protective enclosures, etc., are generally performed during the visual checks in the PM program and documented on the SMS task card. The flow path for CM activities is as follows:

- Problem Identification

Any individual who identifies a problem generates a Maintenance Work Request (MWR), describes the problem and routes the MWR to Maintenance for resolution.

- Data Input

The MWR is entered into the MWR system for tracking and routed to the applicable Supervisor for implementation.

- Work Description

The Supervisor determines the work to be performed and includes it on the MWR. The work may be simplistic in nature and fully stated on the MWR, or require the use of detailed procedures. Safety related and Quality Class II Augmented MWRs are reviewed by QA and hold points established, if required. The Supervisor signs the MWR and distributes it to the work crews for implementation.

- Work Performance

The required work is performed in accordance with the MWR, signed by the individual performing the work, and routed to the Supervisor for review and approval. In addition, supervisory personnel closely follow all critical work to ensure the quality of work and provide expertise.

- Work Review

The Supervisor reviews the work performed for discrepancies, completeness, accuracy, adverse trends, etc., and signs the MWR. Any MWR which is associated with an operational system is routed to the Control Room for establishment and performance of retest requirements.

- Data Input

The completion date and corrective action taken is entered into the MWR system.

- Files

The completion data is transferred and retained in the EQH system, which can provide reports of all activities. In addition, the completed MWRs are retained in hard copy in the plant files.

- Scope

MWRs are used to perform work which will return equipment to "as built" or "as designed" condition only. Other mechanisms, such as plant modifications, are used to implement design changes.

Personnel Qualifications

All personnel who perform work are qualified to the applicable procedures. Records of personnel qualifications are maintained.

NONCONFORMING MATERIALS, PARTS OR COMPONENTS, AND CORRECTIVE ACTION

Nonconforming materials, parts or components, and corrective actions are controlled as described in Chapter 17 of the FSAR.

QUALITY ASSURANCE

The Project Quality Assurance Group and/or the Operational Quality Assurance Group at the project have responsibility for conducting overview surveillances of all activities of the Preventive Maintenance and Preservation Program. Surveillances are scheduled and preplanned and are conducted either using checklists or marked up procedures. The results of surveillances are documented with all deficiencies tracked until closeout. Reports of the results of surveillances are highlighted to Corporate and Project QA management and to the appropriate Project and Plant management for any needed actions.

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Independent Quality Assurance audits are conducted by Supply System QA Auditors that report to the Manager, Audits at the Corporate Office. The control of the audit program is described in Chapter 17 of the FSAR.

QUALITY CONTROL

Quality Control at the Project reports to and is part of the Operational QA Group. All preventive maintenance computer output task cards are reviewed by Quality Control to determine priorities for surveillance and witness activities.

All MWRs are reviewed and signed by Plant Quality Control. Mandatory hold points for inspections are then established and documented on the MWR. Work cannot proceed past a hold point without QC inspection and signature.

RECORDS

The records of all activities involved with the Preventive Maintenance and Preservation Program will be controlled in accordance with the description in Chapter 17 of the FSAR. This includes a commitment to Regulatory Guide 1.88, Revision 2 and ANSI N45.2.9, with the noted exceptions in our Operational QA Topical and the Design and Construction QA Program Description, as described in Chapter 17 of the FSAR.

PRESERVATION PROGRAM

- Structural Material Corrosion Monitoring

The WNP-3 Project has established a program to monitor the effects of corrosion at the construction site. This program provides both qualitative and quantitative data on the structural material changes due to environment through the period of construction delay. Coupons of actual plant materials are observed and tested to obtain corrosion rate data.

The corrosion monitoring program includes atmospheric corrosion test racks in the field and in the buildings. Coupons are monitored for uniform galvanic and pitting types of corrosion. Corrosion coupon materials are representative of actual plant components (i.e., NSSS vessel and piping, carbon steel piping, steam piping, anchor bolting, equipment bolts, reinforcement bar, tanks, pump and stiff clamps).

The corrosion monitoring plan will not be concerned with the insignificant appearance of rust stains on stainless steel or even light rusting of unprotected carbon steel. These are harmless corrosion phenomena that will occur even in operating plants. The program watches for evidence of corrosion mechanisms that might adversely affect the integrity of the material or the component in which it is used.

The corrosion monitoring objective is to obtain data in support of continued construction after the construction delay. Data will be obtained on the atmospheric corrosion degradation to the most corrosion sensitive plant materials used in construction. The data is used to:

- 1) Provide early notification of degrading conditions such that corrective actions can be taken.
- 2) Quantify degradation to verify that structural integrity of construction materials has not been compromised.
- 3) Provide assurance that construction activities can resume with existing stock material.
- 4) Provide a quantitative basis for the evaluation as to the acceptability of the plant to restart construction activities.

The results of the corrosion monitoring program are feedback into the preventive maintenance instructions so that equipment degradation is minimized.

● Hygrothermograph Plant Monitoring

Temperature-humidity monitoring requirements are an integral part of the overall Preservation and Preventive Maintenance requirements. The record of actual temperature-humidity conditions encountered aid in providing assurance that the objectives of the Preservation Program are met.

The primary use of the temperature-humidity records is to indicate the environment the equipment, systems, components, and structures have experienced during the preservation period. The monitoring program is also utilized to provide an early warning of less than acceptable conditions which might lead to equipment damage. Corrective measures, such as changes in preventive maintenance requirements, will then be taken. The records of the monitoring program are also available as evidence of the environment during the preservation period which may be used in part to justify an extended interval in calendar based equipment overhaul periods. The results of the monitoring program will be published periodically in graphic presentation together with analytical interpretation.

Further discussion of the preservation program is included in WMC-051, Appendix B and C.