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Docket Number 50-346

License Number NPF-3

Serial Number 1-1275

May 21, 2002

Mr. J.E. Dyer, Administrator
United States Nuclear Regulatory Commission
Region III
801 Warrenville Road
Lisle, IL 60532-4351

Subject: Transmittal of Davis-Besse Nuclear Power Station, Unit 1 Return to Service Plan

Dear Mr. Dyer:

The purpose of this letter is to transmit the Davis-Besse Nuclear Power Station, Unit 1 (DBNPS) Return to Service Plan. The Return to Service plan describes the DBNPS course of action for a safe and reliable return to service. The course of action includes those actions necessary to address each of the six sets of commitments in the Confirmatory Action Letter (CAL Number 03-02-001A, dated May 15, 2002), the near-term corrective and preventive actions necessary to address the causal factors associated with the head degradation event, and the longer term actions necessary to assure that the underlying causal factors remain corrected and that improved performance at the DBNPS is sustained.

If you have any questions or require further information, please contact Mr. David H. Lockwood, Manager-Regulatory Affairs, at (419) 321-8450.

Sincerely,

Attachments

cc: USNRC Document Control Desk
D.V. Pickett, DB-1 NRC/NRR Project Manager
S.P. Sands, DB-1 NRC/NRR Backup Project Manager
C.S. Thomas, DB-1 Senior Resident Inspector
Utility Radiological Safety Board

Docket Number 50-346
License Number NPF-3
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Attachment 1

DAVIS-BESSE NUCLEAR POWER STATION, UNIT 1
RETURN TO SERVICE PLAN

(29 Pages follow)

FirstEnergy Nuclear Operating Company

FENOC

CLEAN • SAFE • RELIABLE • COMPETITIVE

Davis-Besse Nuclear Power Station

DAVIS-BESSE

RETURN TO SERVICE PLAN

Approvals:

Lew W. Myers — Date

Howard W. Bergendahl — 5/20/02 — Date

Safety ✧ *People* ✧ *Reliability*

FirstEnergy Nuclear Operating Company
Davis-Besse Nuclear Power Station
Return to Service Plan

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I. Introduction and Purpose

Between March 6 and March 10, 2002, as a result of inspections conducted pursuant to NRC Bulletin 2001-01, "Circumferential Cracking of Reactor Vessel Head Penetration Nozzles," Davis-Besse Nuclear Power Station management informed the Nuclear Regulatory Commission (NRC) of the presence of a large cavity in the reactor pressure vessel (RPV) head adjacent to a control rod drive nozzle. On March 13, 2002, the NRC issued a Confirmatory Action Letter (CAL) identifying six sets of commitments that Davis-Besse will meet to address the conditions associated with degradation of the reactor pressure vessel head prior to restart of the reactor, including meeting with the NRC to obtain approval for restart. The CAL was subsequently revised on May 15, 2002.

Prior to this point, the Davis-Besse plant had good operational performance. All NRC cornerstones were GREEN. Previous Institute of Nuclear Power Operations (INPO) evaluations also showed no significant weaknesses, with generally improving trends.

This Return to Service Plan describes the Davis-Besse Nuclear Power Station's course of action for a safe and reliable return to service. This course of action includes those actions necessary to address each of the six sets of commitments in the CAL letter, the near-term corrective and preventive actions necessary to address the causal factors associated with the RPV head degradation event, and the longer term actions necessary to assure that the underlying causal factors remain corrected and that continued safe performance at Davis-Besse is sustained. In addition, the root cause related to the management not promptly identifying the degradation of the RPV head will be corrected.

The near-term actions necessary to support restart will be included in the Davis-Besse Restart Action List and discussed in an Integrated Restart Report, which will document Davis-Besse's response to the NRC's Augmented Inspection Team (AIT) Report, and request NRC approval of restart and closure of the commitments in the CAL letter. The longer term, post-restart actions will be incorporated into the Davis-Besse Business Plan.

This Plan consists of seven Building Blocks, which will support safe and reliable restart and sustained performance improvements:

A. Reactor Head Resolution Plan

B. Containment Extent of Condition Plan

C. System Health Assurance Plan

D. Program Technical Compliance Plan

E. Management and Human Performance Excellence Plan

F. Restart and Post-Restart Test Program

G. Restart Oversight Program

Formal plans are being developed for each of the seven Building Blocks. These plans will be available for NRC review. We look forward to discussing the plans in future meetings and demonstrating our performance.

Davis-Besse management will be deliberate and conservative in implementing the Return to Service Plan and will not return the Station to service until it is satisfied that the Station can be returned to power and operated safely and reliably over the long-term. FirstEnergy Nuclear Operating Company (FENOC) senior leadership will be directly involved in direction and oversight of Davis-Besse's return to service. A Restart Overview Panel, which will include independent industry experts, will provide additional oversight of restart activities.

II. Restart Organization

- Chief Operating Officer assigned to provide corporate direction
- New Vice President of Oversight will review building block activities
- New Executive Officer of Engineering
- Restart Overview Panel and Organization (Figure 2)

III. Integrated Logic and Schedule for Return to Service

The overall schedule is shown on the Appendix 1 flow diagram, and a number of actions to satisfy the CAL letter commitments are completed or underway. The current status of the CAL items is summarized as follows:

(1) Quarantine components or other material from the RPV head and CRDM nozzle penetrations that are deemed necessary to fully address the root cause of the occurrence of degradation of the leaking penetrations. Prior to implementation, plans for further inspection and data gathering to support determination of the root cause will be provided to the NRC for review and comment.

Status: Applicable components and material were quarantined. Plans for inspection and data gathering to support determination of the root cause were provided to the NRC for review and comment. Ongoing activities to support confirmation of the root cause analysis were described by Davis-Besse staff in a public meeting with NRC Headquarters personnel on May 9, 2002.

(2) Determine the root cause of the degradation around the RPV head penetrations, and promptly meet with the NRC to discuss this information after you have reasonable confidence in your determination.

Status: Davis-Besse provided a Probable Cause Summary Report to the NRC on March 22, 2002. Davis-Besse submitted the Root Cause Analysis Report to the NRC on April 18, 2002. Responses to NRC questions on the Probable Cause Summary Report were submitted by Davis-Besse on April 30, 2002, and May 14, 2002. Davis-Besse staff met with NRC Headquarters personnel on May 9, 2002, to review the technical elements of the root cause analysis. FENOC understands that the NRC 0350 Restart Panel will schedule a meeting to review the root cause issues in satisfaction of the CAL letter commitment.

(3) Evaluate and disposition the extent of condition throughout the reactor coolant system relative to the degradation mechanisms that occurred on the RPV head.

Status: On April 15, 2002, Davis-Besse began implementation of its Containment Extent of Condition Plan. The plan has been made available for NRC review. Inspections, evaluations, and dispositions are ongoing and available for NRC inspection and audit.

(4) Obtain NRC review and approval of the repair or modification and testing plans for the RPV head, prior to implementation of those activities. Prior to restart of the reactor, obtain NRC review and approval of any modification and testing activity related to the reactor core or reactivity control systems. If the reactor vessel head is replaced in lieu of repair or modification, the replacement must comply with appropriate Commission rules and industry requirements.

Status: FENOC continues to pursue the RPV head replacement option. If this is the preferred option, a submittal will describe the replacement plan and the basis for compliance with applicable regulatory requirements. In this case, core modifications will not be necessary. NRC approval will be requested in the event that any deviations from applicable regulatory requirements are necessary.

(5) Prior to the restart of the unit, meet with the NRC to obtain restart approval. During that meeting, we expect you will discuss your root cause determination, extent of condition evaluations, and corrective actions completed and planned to prevent recurrence.

Status: Upon completion of the restart actions described in this Plan, FENOC will submit its Integrated Restart Report, which will summarize the root cause determination, extent of condition evaluations and corrective actions completed and planned to prevent recurrence.

(6) Provide a plan and schedule to the NRC, within 15 days of the date of this letter, for completing and submitting to the NRC your ongoing assessment of the safety significance for the RPV head degradation.

Status: The Safety Assessment was submitted to the NRC on April 8, 2002.

IV. Building Blocks

Each of the Building Blocks has been assigned an Owner and an individual responsible for Senior Oversight.

Block	Owner	Oversight
Reactor Head Resolution Plan	David Baker	Bob Schrauder
Containment Extent of Condition Plan	Tim Chambers	Randy Fast
System Health Assurance Plan	Joe Rogers	Jim Powers
Program Technical Compliance Plan	Neil Morrison	Jim Powers
Management and Human Performance Excellence Plan	David Eshelman	Howard Bergendahl
Restart and Post-Restart Test Plan	Tony Stallard	Randy Fast
Restart Action Plan	Clark Price	Howard Bergendahl

These programs are summarized on Figure 1. Each of the plans for the first six Building Blocks will identify those actions that must be accomplished before restart. A Restart Action Review Panel, consisting of senior personnel from Engineering, Regulatory Affairs, Operations and Work Control, will conduct reviews of actions recommended by Building Block Owners to determine which items are appropriate for the Davis-Besse Restart Action List. Appendix 4 provides the preliminary Davis-Besse Restart Action List.

When viewed collectively, the Building Blocks address the causal factors identified in Chapter 5, 6, and 7 of the Davis-Besse Root Cause Analysis Report. Appendix 2 provides a matrix which correlates the Building Block actions to the causal factors identified by FENOC and the corresponding causes and missed opportunities identified in the NRC's AIT Report.

The Management and Human Performance Excellence Plan will include actions to extend and deepen the analyses of causal factors in the Root Cause Analysis Report. This will include an in-depth review, under the leadership of the new FENOC Oversight Vice President, using formal root cause analysis tools to determine why indicators present before 2002 did not result in detection and resolution of RPV head degradation.

FENOC Oversight will monitor and sample each Building Block prior to restart. The Vice President, Oversight, will be a member of the Restart Overview Panel. A brief summary of the major elements of the actions and approach for each Building Block follows.

A. Reactor Head Resolution Plan

Charter: Restore the degraded Davis-Besse RPV head such that it is in compliance with appropriate Commission rules and industry requirements.

On April 25, 2002, FENOC submitted a Repair Plan for the Davis-Besse RPV head, along with two requests for NRC approval under 10 CFR § 50.55a. FENOC continues to pursue the replacement of the degraded head option with a head originally fabricated for the Midland reactor.

On May 8, 2002, the company signed a letter of intent to purchase the Midland head. A radiography to validate material is scheduled to be completed on May 22, 2002.

Current plans include collection of existing quality assurance and code documentation, examinations and any actions necessary to refurbish the head, and certification of the Midland head for compliance with the applicable ASME code. If required, NRC approval will be sought in accordance with the terms of the revised CAL letter.

B. Containment Extent of Condition Program

Charter: Prior to restart, evaluate and disposition the extent of condition throughout the reactor coolant system and Containment systems, structures, and components relative to the degradation mechanisms that occurred on the RPV head.

Small amounts of borated water leaked into containment and were spread onto components by ventilation systems.

There were two specific degradation mechanisms that were observed on the RPV head that will be addressed in the extent of condition evaluation. The mechanisms are primary water stress corrosion cracking (PWSCC) and boric acid corrosion. The purpose of the Containment Extent of Condition Program is to identify any problems due to PWSCC and boric acid leakage on components inside the containment.

FENOC is also pursuing replacing the RPV head with an unused head from the Midland plant. This action will resolve any concerns with respect to the extent of condition on the RPV head.

The extent of condition of PWSCC and boric acid degradation of other components within the containment will be evaluated via walkdowns of systems, structures, and components (SSCs) within containment. In defining the scope of the walkdowns, three separate criteria will be used to ensure that a bounding evaluation is performed. These criteria are:

(1) Sources: As used in this evaluation, sources are components containing borated water that are considered likely leak locations. The sources are further divided into three groups: Valves, Threaded/Bolted joints (e.g. thermowells, manways, handholes, reactor coolant pumps), and Alloy 600 components/welds. The Alloy 600 components/welds are susceptible to PWSCC. The intent is to: (1) verify there is no additional reactor coolant system (RCS) pressure boundary leakage at Davis-Besse (from Alloy 600 components/welds); and (2) verify that evidence of RCS leakage from any source is properly evaluated (including the potential impact on susceptible materials of the RCS pressure boundary).

(2) Targets: As used in this evaluation, targets are components within the RCS pressure boundary that utilize materials susceptible to boric acid corrosion (carbon and low-alloy steels) as part of the pressure boundary. The targets include the following RCS components: RPV, steam generators, pressurizer, reactor coolant pumps and individual piping sections. The intent is to verify that boric acid corrosion has not degraded the RCS pressure boundary. Additionally, although technically not within the RCS pressure boundary, the core flood tanks will be evaluated as targets. It should be noted that certain valves within the RCS pressure boundary may contain susceptible materials but for convenience the valves are listed as sources.

(3) Safety-related (non-RCS pressure boundary) SSCs: This criteria refers to safety-related SSCs that utilize materials susceptible to boric acid corrosion but are not part of the RCS pressure boundary. The intent is to verify that boric acid corrosion has not adversely impacted the function of safety-related SSCs.

Methodology:

(1) Plant Engineering will develop a list of inspection points to address the sources and targets. A table of valves and threaded/bolted connections previously developed for Mode 5 walkdowns will be used to identify these sources (most of these walkdowns are complete at this date). A list of Alloy 600 components/welds within the RCS pressure boundary has been provided by Design Basis Engineering. Each target will receive a visual inspection of the external surfaces of installed insulation for evidence of leakage (boric acid residue or bulging of the insulation). Additionally, each connection point between a target and non-susceptible piping will be inspected to verify that no boric acid has migrated undetected under the insulation to reach a susceptible component. These inspections (external inspection of the insulation and visual inspection of connection points) will provide adequate assurance that there is no undetected degradation of the RCS pressure boundary. It should be noted that many of the "connection points" are Alloy 600 components/welds that also require inspection as potential sources. These inspections will be performed by VT-2 qualified

personnel. Representative photographs will be made to document the "as found" condition of each inspection point.

(2) In any case where evidence of boric acid deposits exists, the source of the deposits and the leak path must be traced to ensure that there is no wastage of the RCS pressure boundary.

(3) The third category, safety-related (non-RCS pressure boundary) SSCs, will be addressed by general area walkdowns of the containment building. These walkdowns will be primarily conducted by Design Engineering Mechanical/Structural (DEMS) and Design Engineering Electrical/Controls (DEEC). The DEMS personnel will focus on safety-related SSCs such as structural steel, concrete, pipe supports, control rod guide tube supports, susceptible non-RCS piping and coatings. DEECS will focus on cabling, conduit, junction boxes, etc. Plant Engineering will perform inspections of ventilation systems within containment (such as CACs and ductwork). Photographs will be made to document any boric acid deposits/corrosion discovered during these walkdowns.

(4) Boric acid deposits will be documented on a CR and will be removed. This will prevent future degradation of susceptible materials due to re-wetting of dry boric acid deposits. It will additionally ensure a proper baseline condition for future inspections.

(5) Degradation of an SSC due to boric acid corrosion will be documented on a Condition Report (CR) and evaluated. Degradation that requires resolution will be placed on the Restart Action List and corrected prior to restart. Additionally, degraded SSCs will be reworked or preserved as needed to ensure high standards of material condition and housekeeping.

Finally, an outage inspection plan will be developed for use after restart. This will also be part of the Restart and Post-Restart Test Program described below.

C. System Health Assurance Plan

Charter: Perform an Operational Readiness Review of systems important to the safe and reliable operation of Davis-Besse. Perform a comprehensive system assurance review of Maintenance Rule and Technical Specifications systems to ensure their ability to support safe and reliable operation of the plant. Prior to restart, perform a review of the RCS to identify any latent issues and ensure it is capable of performing its design functions.

The purpose of this program is to perform reviews of system health prior to restart to ensure that the condition of the plant is sufficient to support safe and reliable operation.

FENOC will develop a list of systems that will fall within the scope of this review. These systems will include all safety-related systems, safety-significant systems as

identified under the Maintenance Rule program, and selected other systems (such as the Fire Protection System).

The respective system engineers for each of these systems will review and evaluate the following types of documents as applicable to their systems:

- System health reports
- CRs for past five years
- Modification requests
- Industry and operating experience reports for the past five years
- Open work orders and work order history

The purpose of these reviews will be to identify conditions (either individually or collectively) that could impact the function or reliability of the system. Such conditions will be designated as restart constraints, will be evaluated for inclusion in the Restart Action List, and will be corrected prior to restart.

Additionally, the respective system engineers will review and evaluate the corrective actions taken for the following types of documents as applicable to their systems:

- CRs closed within the last five years
- Industry and operating experience reports closed within the last five years
- Violations and non-cited violations closed within the last four years

The purpose of these reviews will be to verify that FENOC has taken appropriate action to correct the condition in question (or confirm that the condition does not exist at Davis-Besse) and prevent its recurrence. If these reviews identify any corrective or preventive actions that were inadequate or insufficient, the condition will be documented on a CR and will be evaluated to determine whether additional action is needed prior to restart to ensure the safety and reliability of operation.

The results of each system engineer review will be documented in a report. The system engineer will provide the report and make an oral presentation to a system readiness restart panel chaired by the Plant Manager and consisting of representatives of Operations, Engineering, Work Control, and Regulatory Assurance. The report will be subject to review and approval by the system readiness panel.

D. Program Technical Compliance Plan

Charter: Perform a review of listed plant programs to ensure that the programs are fulfilling required obligations, including interfaces and handoffs, and are sufficient to support the safe operation of Davis-Besse. Prior to restart, perform detailed reviews of the Boric Acid Corrosion Control Program, Inservice Inspection (ISI) Program, Plant Modification Program, Corrective Action Program, and Operating Experience Program. Following plant restart, complete reviews of the remaining programs on the list.

FENOC will undertake a systematic review of plant programs implicated as a result of the reactor pressure vessel head degradation, including the Corrective Action Program, the Boric Acid Control Program, the ISI Program, and the Operating Experience Program. The systematic review will utilize the methodology of the Latent Issues Program that FENOC has successfully applied on key systems at its Beaver Valley plant. The systematic review will determine whether program attributes comply with the applicable basis documents and commitments, the roles and responsibilities for program implementation are clearly defined, the interfaces with other programs or workgroups are controlled and effectively implemented, operating experience is appropriately incorporated, and management involvement occurs at critical points. Each review will be conducted with assistance from program engineers and outside technical expertise. The results of the review will be documented and presented to a Program Review Board chaired by the Beaver Valley Latent Issues Manager and including Davis-Besse senior management and/or management from plants outside the FENOC system. Finally, the presentation will be made to the Restart Overview Panel on each program reviewed.

Pre-restart reviews will include relevant portions of the Boric Acid Control, ISI, Corrective Action, Operating Experience, and Modifications Programs. Based upon these reviews, corrective and preventive actions will be implemented as necessary prior to restart. A sequence and schedule for additional reviews, based upon risk to plant reliability and safety, has been developed.

E. Management and Human Performance Excellence Plan

Charter: Conduct an assessment prior to restart of the managerial and organizational issues surrounding the degradation of the RPV head. From this assessment, create a comprehensive leadership and organizational development plan for the site. This plan will include actions to be taken prior to and after restart.

FENOC has augmented senior leadership capabilities and will apply them in a focused manner to Davis-Besse restart. The new Chief Operating Officer of FENOC will maintain a strong presence at Davis-Besse throughout restart and post-restart testing, while the new Oversight Vice President will be involved in

improving both the corporate oversight of Davis-Besse and the effectiveness of site oversight groups.

FENOC will utilize a Restart Overview Panel, which will include independent industry expertise, to provide senior oversight of restart. This team will meet routinely to establish actions, and approve Building Block activities and progress.

Corporate Oversight will evaluate the effectiveness of site oversight processes, including Quality Assurance and make adjustments as appropriate. In the longer term, Corporate Oversight will conduct a review of Corrective Action Program implementation. This is in addition to the pre-restart review of the Corrective Action Program that will be undertaken in connection with the Program Technical Compliance Plan.

FENOC has requested an INPO Senior Management assist visit by a group of senior industry executives to provide additional insight into management issues implicated by the head degradation events.

FENOC is undertaking additional assessments to improve its understanding of causal factors and provide higher confidence that management issues are understood and addressed. Any additional insights and corrective actions will be evaluated and applied.

The new Corporate Oversight Vice President will lead an examination of the five key closed CRs on the RPV head to understand why those CRs were dispositioned without detection and resolution of the degradation.

F. Restart and Post-Restart Test Program

Charter: Perform required testing of the RCS to identify and disposition leakage during fill and vent of the RCS and at normal operating temperature and pressure. Assess and enhance the leakage control program to provide assurance of containment systems and components material condition.

As part of the restart process, FENOC will conduct inspections of systems containing boric acid to ensure that the systems do not contain leaks that would lead to boric acid degradation of SSCs. These inspections will be conducted during two points: (1) during fill and venting of systems; and (2) when systems are at their normal operating temperature and pressure.

VT-2 qualified personnel will conduct these inspections. These personnel will conduct walkdowns of the SSCs identified as potential sources in the extent of condition program to identify whether there is active leakage. Leakage will be identified, documented and corrected appropriately.

Additionally, FENOC is developing a leakage inspection program for use during subsequent outages. The purpose of this longer-term program will be to ensure that Davis-Besse continues to be leaktight when it returns to service from outages.

Finally, FENOC will perform reviews of equipment and containment material condition in future refueling outages. The purpose of these reviews will be to ensure that SSCs remain free of boric acid contamination and corrosion. This includes not only RCS components, but also components such as the Containment Air Coolers.

G. Restart Action Plan

Charter: Administer the identification, coordination, monitoring and closure of the actions required to meet all Company-defined objectives and requirements under the Davis-Besse Return to Service Plan.

The Restart Action Plan will establish a counterpart mechanism for management control of restart actions and effective interaction with the NRC 0350 Restart Panel. The Restart Action Plan Owner will chair the Davis-Besse Restart Action Review Panel, which will include senior representatives from Operations, Engineering, Regulatory Affairs, and Work Control. This Panel will review recommendations for restart actions received from Building Block Owners, input from the NRC, and emergent issues and make an initial determination for inclusion on the Davis-Besse Restart Action List. After review by the Davis-Besse Senior Management Team, the resulting Restart Action List items will be provided to the NRC for concurrence. The Restart Action Review Panel will use criteria that parallel the NRC's criteria in Inspection Manual Chapter 0350 and the site Corrective Action Program in determining whether to include an action on the Restart Action List. These Criteria are listed in Appendix 3.

FENOC's preliminary Restart Action List is provided in Appendix 4. This list will be revised as necessary as FENOC implements its Building Blocks.

After items are processed through the Davis-Besse Restart Action Review Panel, those items not included on the Restart Action List will be documented and directed to the Corrective Action Program or Business Planning process, as appropriate.

The Davis-Besse Restart Action Oversight Process will be maintained through restart and until the NRC 0350 Restart Panel completes its mission.

V. Conclusions

FENOC is taking an integrated and comprehensive approach to complete the items in the CAL, address the causal factors in the Root Cause Analysis Report and AIT Report, and identify and implement restart actions and long-term actions to ensure that Davis-Besse is ready for safe and reliable operation and improved performance. FENOC is structuring its approach around seven key Building Blocks, and is developing detailed plans for each of the Building Blocks. These plans will be made available for NRC review, and will provide the foundation for Davis-Besse's safe and reliable return to service. Lessons

learned from the conclusions drawn from these programs will be shared with the FENOC plants as well as the nuclear industry.

FIGURE 1

DAVIS-BESSE RESTART BUILDING BLOCKS

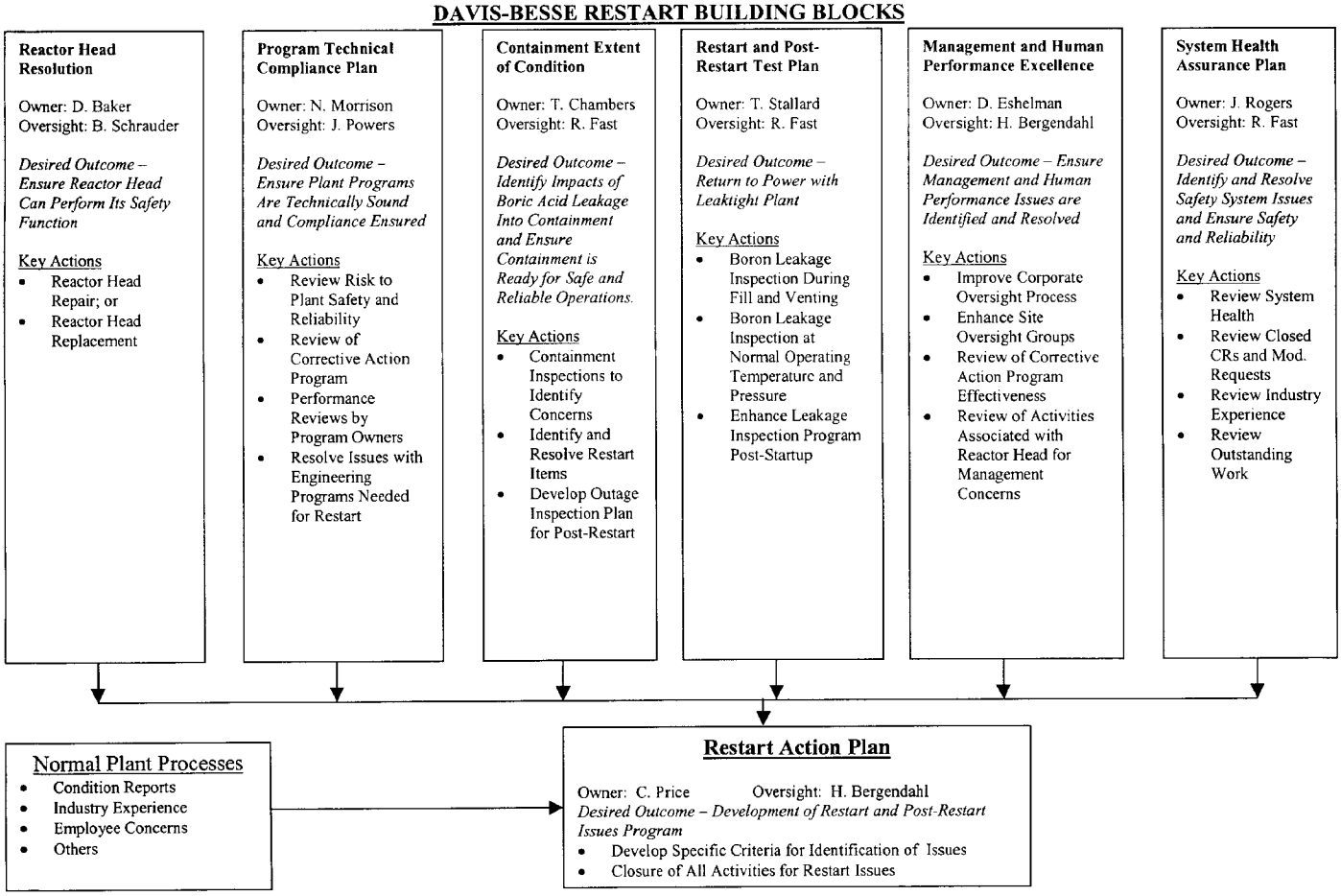
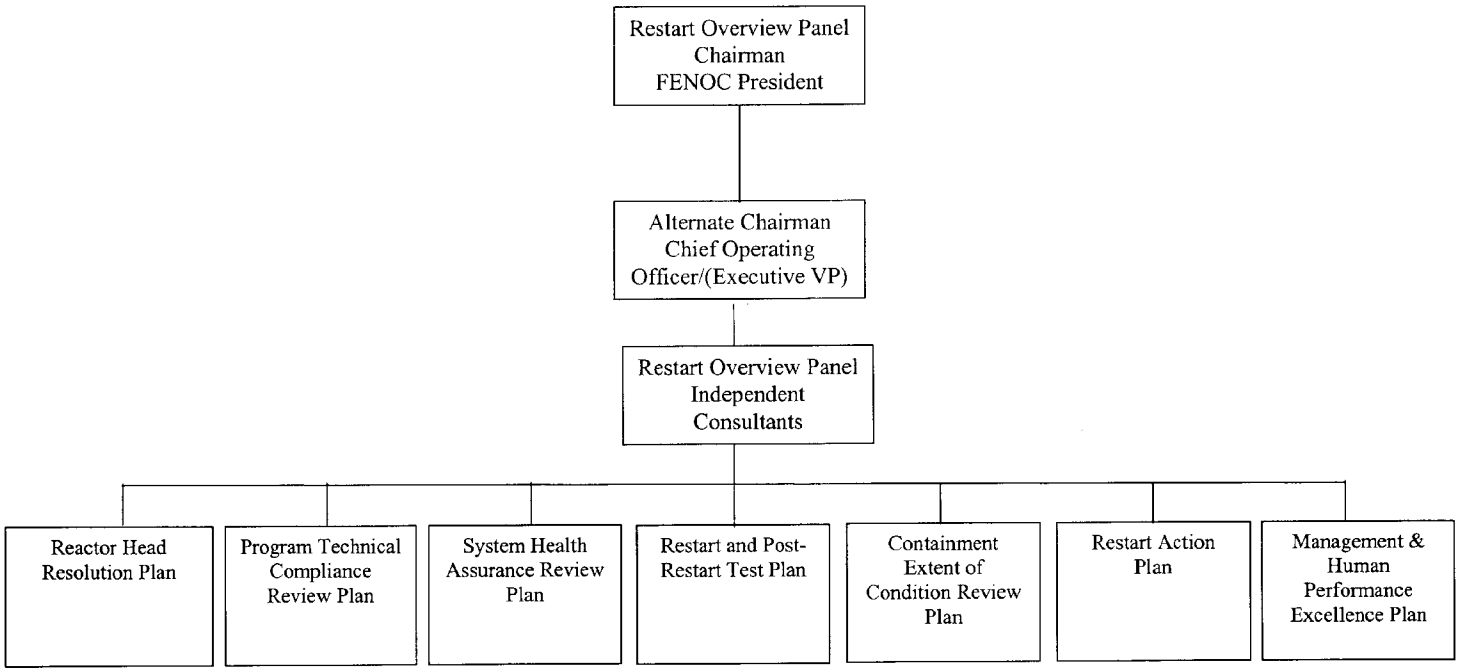
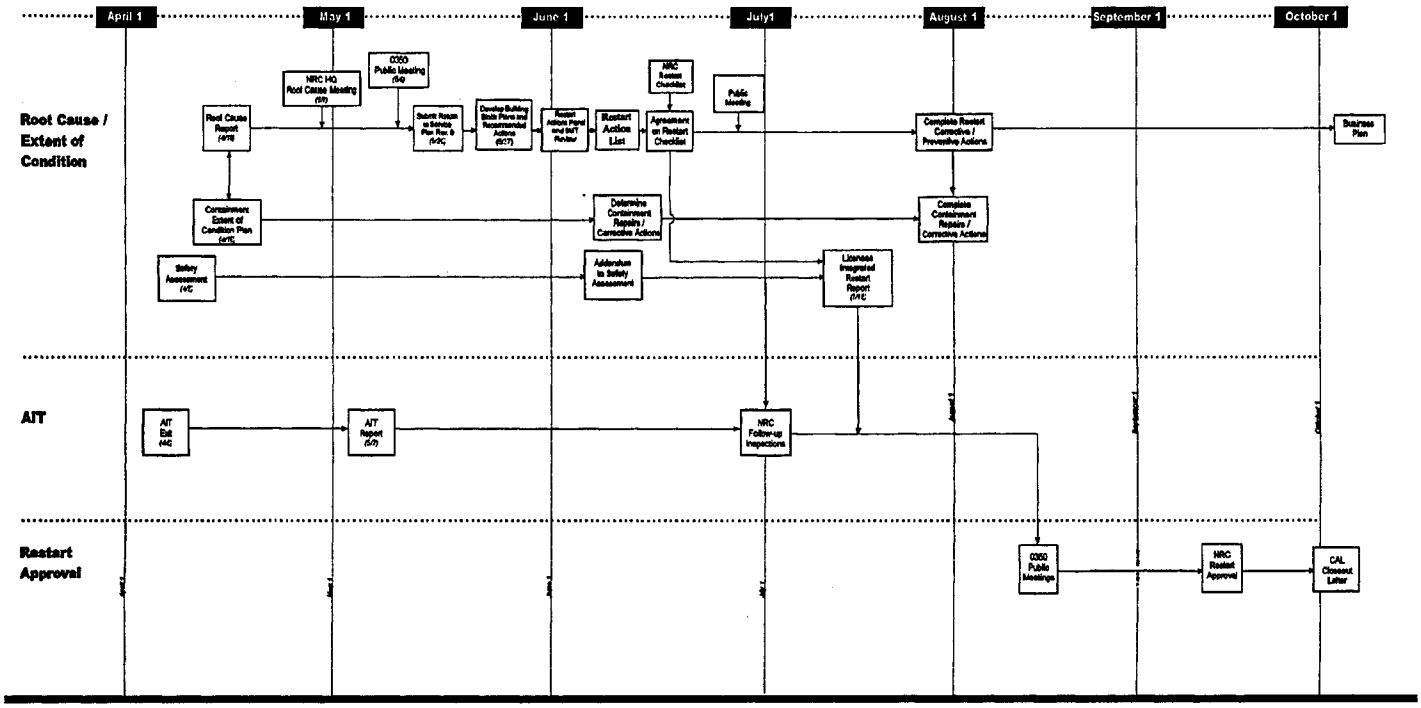


FIGURE 2

Restart Organization



APPENDIX 1
Davis-Besse Return to Service Logic



APPENDIX 2

CORRELATION OF CAUSAL FACTORS VERSUS RESTART BULDING BLOCKS

Causal Factor	Building Block	Action
Root Cause Analysis Report		
PWSCC of CRDM nozzles	Reactor Head Resolution	Restore the head.
	Restart and Post-Restart Test Program	Inspect for any leaks.
Boric acid corrosion of RPV head	Reactor Head Resolution	Restore the head.
	Containment Extent of Condition	Inspections in the containment for other SSCs that may be affected by boric acid.
Boric Acid and Inservice Inspection Programs and program implementation	Program Technical Compliance Plan	Review of Boric Acid and ISI Programs by program owners.
Environmental conditions and cramped conditions at the RPV head	System Health Assurance Program	Review of modification requests to identify modifications that should be implemented prior to restart. (Note: the modification to improve access to the RPV head service structure has been completed.)
Uncorrected CRDM flange leakage	Restart and Post-Restart Test Program	Inspect for any leaks. (Note: flange leakage was corrected in RFO 12)
Management monitoring of field activities	Management and Human Performance Excellence Plan	Management monitoring and oversight improvement.
Management monitoring of changes in conditions	Management and Human Performance Excellence Plan	New oversight processes.
	Program Technical Compliance Plan	Review of Boric Acid and ISI Programs by program owners.
	Restart and Post-Restart Test Program	Inspect for leaks and boric acid corrosion.

Causal Factor	Building Block	Action
Technical standards	Program Technical Compliance Plan	Ensure program compliance.
Use of industry and in-house experience	Management and Human Performance Excellence Plan	Industry experience management review.
	Program Technical Compliance Plan	Performance reviews of industry experience programs by program owner.
	System Health Assurance Plan	Review of closed industry and operating experience reports on SSCs to determine adequacy of actions.
Execution of Condition Report Program	Program Technical Compliance Plan	Review of Corrective Action Program.
	Management and Human Performance Excellence Plan	Review of missed opportunities associated with reactor head for management concerns.
	System Health Assurance Program	Review of closed CRs on SSCs to determine adequacy of corrective action.
AIT Report		
PWSCC of CRDM nozzles	Reactor Head Resolution	Restore the head.
	Restart and Post-Restart Test Program	Inspect for any leaks.
Boric acid corrosion of RPV head	Reactor Head Resolution	Restore the head.
	Containment Extent of Condition	Inspections in the containment for other SSCs that may be affected by boric acid.
Boric acid corrosion control program	Program Technical Compliance Plan	Review of Boric Acid and ISI Programs by program owners.
Reactor Coolant System leakage detection	Restart and Post-Restart Test Program	Inspect for any leaks.
Boric acid in Containment Air Coolers	Restart and Post-Restart Test Program	Inspections in the containment for other SSCs that may be affected by boric acid.
Boric acid in radiation elements	Restart and Post-Restart Test Program	Inspections in the containment for other SSCs that may be affected by boric acid.

Causal Factor	Building Block	Action
Delay of Modification of Service Structure	System Health Assurance Program	Review of modification requests to identify modifications that should be implemented prior to restart. (Note: the modification to improve access to the RPV head service structure has been completed.)
Delay of Repair of CRDM Flange Leakage	Restart and Post-Restart Test Program	Inspect for any leaks. (Note: flange leakage corrected in RFO 12.)

APPENDIX 3

Criteria for Placement of Issues on Davis-Besse Restart Action List

SCAQ – Significant Condition Adverse to Quality

A Condition Adverse to Quality that has, or if left uncorrected could have, an undesirable effect on plant safety, regulatory position, or environmental impact.

Violation of Tech Specs, LERs, unexpected plant scram/trip, an Engineering Safety Feature actuation, exceeding dose or environmental release limit, ineffective corrective actions that address significant conditions adverse to quality, a major deficiency in the process or implementation of the FENOC QA Program or a verified adverse trend of a Condition Adverse to Quality.

CAQ – Condition Adverse to Quality– with Mode Restraint designation

An all-inclusive term used in reference to any of the following: failures, malfunctions, deficiencies, deviations, defective hardware, and non-conformances to Quality (Q), Augmented Quality (AQ), Nuclear Safety-related equipment, programs or processes, Risk-Significant Systems, or Maintenance Rule Systems/Components.

Procedural violation, violation or potential violation from NRC, configuration control issue, components mispositioning, material traceabilty issue, repeat maintenance failure, unexpected equipment failure, etc., that are related to Quality, Augmented Quality, or Nuclear Safety-related equipment, programs, or processes.

APPENDIX 4

Davis-Besse's Preliminary Restart Action List

Restart Issue	Description	Lead	Status	Corrective Actions for Restart		Closure Date	IR No.
				Action	Status		
Cracking of CRDM nozzles	FENOC identified axial indications and leakage of CRDM nozzles.	NRC: FENOC: T. Chambers	Open	1. Restore the reactor vessel head	1. Ongoing		
Boric acid corrosion of RPV head	FENOC identified boric acid corrosion of the reactor vessel head.	NRC: FENOC: T. Chambers	Open	1. Restore the reactor vessel head 2. Provide response to Bulletin 2002-001. 3. Develop plan for restart and Post-Restart testing to ensure leaktight plant.	1. Ongoing 2. Ongoing 3. Ongoing		

Restart Issue	Description	Lead	Status	Corrective Actions for Restart		Closure Date	IR No.
				Action	Status		
Modifications of core and reactivity control systems	FENOC is committed to obtain NRC review and approval of any modification and testing activity related to the reactor core or reactivity control systems.	NRC: FENOC: R. Borland	Open	1. NRC approval of changes.	1. Ongoing		

Restart Issue	Description	Lead	Status	Corrective Actions for Restart		Closure Date	IR No.
				Action	Status		
Root cause analysis	FENOC is committed to determine the root cause of the degradation around the RPV head penetrations.	NRC: FENOC: D. Eshelman	Open	1. Perform root cause analysis and submit to NRC. 2. Meet with NRC to discuss the root cause analysis. 3. Develop plan of corrective and preventive actions for root cause analysis. 4. Meet with NRC to discuss corrective actions completed and planned to repair the damage and prevent recurrence.	1. Complete (4/18/02) 2. NRC has not yet set a meeting date. 3. Recommendations for actions were provided in the Root Cause Analysis Report. Approved plans will be provided in an integrated restart report. 4. To be scheduled.		

Restart Issue	Description	Lead	Status	Corrective Actions for Restart		Closure Date	IR No.
				Action	Status		
Extent of condition (EOC)	FENOC is committed to evaluate and disposition the extent of condition throughout the reactor coolant system relative to the degradation mechanisms that occurred on the RPV head.	NRC: FENOC: Plant Engineering	Open	1. Develop plan for determining EOC and submit to NRC. 2. Implement EOC plan. 3. Evaluate whether adverse conditions to identify which must be corrected prior to restart. 4. Implement corrective action for restart actions. 5. Meet with NRC to discuss the extent of condition evaluations.	1. Complete (4/18/02) 2. Ongoing 3. Ongoing 4. Ongoing 5. To be scheduled.		

Restart Issue	Description	Lead	Status	Corrective Actions for Restart		Closure Date	IR No.
				Action	Status		
Boron acid corrosion control and ISI programs	The boric acid corrosion control and ISI programs and their implementation were not sufficient to detect through-wall leakage of the CRDM nozzles and degradation of the RPV head.	NRC: FENOC: J. Rogers	Open	1. Perform self-assessment of boric acid corrosion control and ISI programs.	1. Ongoing		
Cramped conditions for inspecting RPV head	Cramped conditions were a contributing cause of not identifying the through-wall leakage of the CRDM nozzles and degradation of the RPV head.	NRC: FENOC: M. McLaughlin and T. Swim	Open	1. Modify service structure to provide improved access to RPV head.	1. Complete		

Restart Issue	Description	Lead	Status	Corrective Actions for Restart		Closure Date	IR No.
				Action	Status		
Management monitoring	Management monitoring did not identify problems and changes in conditions related to the degradation of the RPV head.	NRC: FENOC: R. Fast	Open	1. Develop a plan for increased presence of management in the field. 2. Provide training case study on the lessons learned and missed opportunities related to the RPV head degradation. 3. Review/revise charter and membership of Project Review Committee and Corrective Action Review Board.	1. Ongoing 2. Ongoing 3. Ongoing		

Restart Issue	Description	Lead	Status	Corrective Actions for Restart		Closure Date	IR No.
				Action	Status		
Corrective action program and program implementation	Condition Reports (CRs) on boric acid on the reactor vessel head were closed without complete removal of the boric acid.	NRC: FENOC: D. Eshelman	Open	1. Review of Corrective Action Program. 2. Review of corrective actions closed on reactor vessel head for management concerns. 3. Review of closed CRs on safety-significant structures, systems, and components (SSCs) over the last five years to verify adequacy of corrective action.	1. Ongoing 2. Ongoing 3. Ongoing		

Restart Issue	Description	Lead	Status	Corrective Actions for Restart		Closure Date	IR No.
				Action	Status		
Industry and operating experience program	Previous industry and in-house experience were not effectively used to prevent problems.	NRC: FENOC: D. Eshelman	Open	1. Review of industry experience management program. 2. Review of closed industry experience reports on safety-significant SSCs over the last five years to verify adequacy of action.	1. Ongoing 2. Ongoing		

Docket Number 50-346
License Number NPF-3
Serial Number 1-1275
Attachment 2

DAVIS-BESSE NUCLAER POWER STATION RESTART OVERSIGHT PANEL POLICIES AND PROCEDURES (DRAFT)

(8 Pages Follow)

DAVIS-BESSE RESTART OVERVIEW PANEL
POLICIES & PRACTICES

PREPARED BY: _____ DATE:_____

REVIEWED BY: _____ DATE:_____
FENOC CHIEF OPERATING OFFICER

REVIEWED BY: _____ DATE:_____
FENOC EXECUTIVE VICE PRESIDENT

APPROVED BY:_____ DATE:_____
FENOC PRESIDENT

Revision 0 EFFECTIVE DATE: ____

DRAFT

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Scope of Revision

1. Initial Issue

1.0 PURPOSE

This document governs the function of the Restart Overview Panel for the First Energy Nuclear Operating Company (FENOC) Davis-Besse Nuclear Power Plant.

2.0 POLICY

The Restart Overview Panel (ROP) shall function to provide an independent oversight and review of plant activities needed for restart to ensure that the Davis-Besse plant is ready to resume power operations and will be safely operated and maintained.

The ROP will assess the Building Block plans and their implementation. The group will ensure good technical implementation and provide actions for either technical activities or management actions that must be completed prior to restart.

3.0 RESPONSIBILITY

3.1 **The FENOC President** is responsible for:

3.1.1 Approval of the ROP policy.

3.1.2 Serving as the chairman of the ROP.

3.2 **The Chief Operating Officer (COO)** is responsible for:

3.2.1 Providing corporate direction needed for restart.

3.2.2 Serving as the alternate chairman of the ROP

3.2.3 Ensuring Building Block presentations are ready for ROP reviews.

3.3 **The Davis-Besse Vice President** is responsible for:

3.3.1 Informing the FENOC President on any ROP issue relative to the resumption of safe operation of the Davis-Besse Power Plant.

3.3.2 Directing site management to evaluate and respond to ROP recommendations and actions, as necessary.

3.4 **FENOC Executive Vice President** is responsible for:

3.4.1 Reviewing and recommending the ROP policy for approval.

3.4.2 Ensuring the generation of ROP meeting minutes.

3.4.3 Preparing presentations that are technical issues for restart

3.4.4 Serving as the alternate chairman of the ROP as necessary.

3.5 **The Davis-Besse Management Team** is responsible for:

3.5.1 Appointing membership to Building Block subcommittees.

3.5.2 Responding to recommendations and action items identified by the ROP.

3.6 **ROP members and Subcommittee members** are responsible for performing in-depth, independent nuclear safety reviews, in areas of their expertise, to identify nuclear safety concerns and carry out the duties defined in this policy.

3.7 **ROP Administrator** is responsible for providing the administrative duties necessary to support the implementation of this policy. These duties include, and are not limited to, maintaining this document, ensuring compliance with commitments related to ROP activities, documenting meeting minutes, maintaining files, resolving comments as directed by the Chairman and/or the committee members, and maintaining an action list of open items.

4.0 MEMBERSHIP

4.1 The ROP shall have at least five members, one of which is Chairman or Alternate Chairman, with membership from FENOC, INPO, and/or outside consultants, to be comprised of the following:

- FENOC Chief Operating Officer (Alternate Chairman)
- FENOC Executive Vice President (Alternate Chairman)
- FENOC Vice President of Oversight
- FENOC CNRB outside consultant
- Institute of Nuclear Plant Operators (INPO) representative
- Davis-Besse PORC Chairman
- Two (2) outside consultants

4.2 Independent reviews may be supplemented through additional outside consultants or organizations if sufficient expertise is not available from the ROP.

4.3 ROP members shall have a bachelor's degree in an engineering discipline or physical science or equivalent experience and a minimum of five years of technical experience. In special cases, five years of experience in a specialized field may be acceptable to waive the bachelor's degree requirements. At least four individuals shall have commercial PWR operating experience.

4.4 The ROP Chairman shall have a minimum of ten years of nuclear power experience, of which three years shall be commercial nuclear power experience. A maximum of four years of the remaining seven years of experience may be fulfilled by academic training on a one-for-one time basis. This academic training shall be in an engineering or scientific field associated with power plants. In addition, the ROP Chairman shall have the necessary

overall nuclear background to determine when to call consultants and contractors for dealing with complex problems beyond the scope of owner-organization expertise.

4.5 ROP members may invite non-members to participate in ROP meetings at the ROP Chairman's discretion.

4.6 Appointment of committee members, chairmen, alternate chairmen, and task force members will be documented in the meeting minutes. Note: This serves as formal appointment in writing and is applicable to the ROP and associated Subcommittees.

4.7 ROP Subcommittees shall have at least two members, one of which is the Subcommittee Chairman. Unless approved by the FENOC President, the Subcommittee Chairman should be an ROP Committee member.

5.0 TRAINING

The ROP Administrator shall be responsible to ensure that the required site-specific training is completed.

6.0 MEETINGS

6.1 Meeting Frequency

6.1.1 Meetings may be scheduled as needed but not less frequently than once per month. If a situation requires a special meeting, it may be held by having a quorum physically present or by establishing a quorum by a telephone conference call. A meeting at any FENOC nuclear plant, within the specified time limits, satisfies the meeting frequency.

6.2 Quorum

6.2.1 A quorum shall consist of not less than five members including the ROP Chairman (or Alternate ROP Chairman). Additionally, it shall be subject to the following constraints:

- The ROP Chairman (or his duly appointed alternate) shall be present for all formal meetings
- No more than two alternates shall participate as voting members in ROP activities at any one time.
- In the event that a majority of the members are not able to be physically present at a common location, meetings may be conducted using a telephone conference call.

6.3 Meeting Agenda

Meeting agenda is prepared by the ROP Administrator, approved by the ROP Chairman and distributed in advance of the scheduled meeting date. To ensure timely inclusion, ROP members should submit items to be considered for the agenda to the ROP Administrator at least one (1) week prior to the scheduled meeting. Items to consider for the agenda include:

Time, date, and location of the meeting	Discussion/Approval of past minutes
Plant Status Report	Startup Checklist status
Subcommittee Reports	Specific Topics
Input from others; e.g., Vice Presidents	Action/Open Items

The proposed agenda, for regularly scheduled meetings, should be distributed to:

ROP Chairmen & members	Davis-Besse Vice President
Perry Vice President	FENOC President
Beaver Valley Vice President	Personnel as directed by the Chairman
Other meeting participants	

6.4 Conduct of Meeting

The Chairman shall preside at ROP meetings, utilizing the agenda as a guide. He shall ensure that action desired by the ROP on an item is clearly identified and, if not resolved, carried forward to a future meeting as a recommendation or action item. Discussion on an item will continue until there is consensus on the desired action. When consensus does not exist the Chairman may request a motion and a vote of the members. Minority positions shall be addressed in the minutes. Majority approval of the members is required to pass a motion.

6.5 Meeting Minutes

6.5.1 Meeting minutes shall be prepared for the ROP Main meeting. Results of all other subcommittee reviews will be documented in the ROP Main Committee minutes as general discussion in the respective topical areas. The meeting minutes, as a minimum, shall include discussion and recommendations made by the Committee.

6.5.2 ROP Main and Subcommittee Meeting minutes, approved by the Chairman, shall be distributed to the Committee members for review within 30 days of the meeting. Approved meeting minutes are distributed to personnel identified in paragraph 7.3 as applicable. The approved ROP Main and Subcommittee meeting minutes shall be retained and filed by ROP Administrator.

6.5.3 Three types of follow-up mechanisms are available. All are to be documented in the meeting minutes. Recommendations and action items require formal tracking and resolution. Resolution can be in the form of a written response or a formal presentation at the committee meeting. In either case the resolution must be reviewed and approved by the committee members and documented in the meeting minutes.

a. **Recommendations** are issued by the ROP as a result of a nuclear safety concern and/or issues that warrant the attention of the FENOC President.

b. **Action items** are issues that are raised during the meeting that warrant the attention of Davis-Besse staff.

c. **Suggestions** are items raised during meetings considered by the ROP membership worthy of formal notation but not requiring response as in a. or b. above. They will be documented in the meeting minutes. Formal response is not required and they will not be tracked.

7.0 REVIEWS

7.1 ROP members individually performing review of an activity or action shall not have been responsible for that activity or action under review.

7.2 The ROP may create Subcommittees to perform specific review functions on behalf of the ROP. Delegated review responsibilities are identified on Attachment 1. Unless directed otherwise, in writing, by the ROP Chairman, the Subcommittee is expected to function in accordance with this policy.

7.3 Review Responsibilities

The ROP Administrator will, as a minimum, provide to the Committee members documents identified on Attachment 1. Normally the review due date will coincide with the next scheduled specific meeting date. The transmittal numbers and/or the document number (or title) contained on the transmittals will be included as part of the next ROP meeting minutes, thereby providing document review closure.

8.0 RECORDS

8.1 The following quality assurance records are completed by this policy and shall be submitted to Nuclear Records Management in accordance with Davis-Besse Procedure NG-NA-00106

8.2 ROP meeting minutes.

8.3 T his document, "Davis-Besse Restart Overview Panel Review Board Policies and Practices"

8.4 Documents generated outside the scope of paragraph 8.1 are considered to be non-quality records. At the ROP administrator's discretion, they may be submitted to Nuclear Records Management.

ATTACHMENT 1
ROP DOCUMENTS REVIEW MATRIX

Document	**Ref:ANSI 18.7 1976/ ANS 3.2**
Restart Checklist	Para. 4.3.4.5
System Health Reports	Para. 4.3.4.5
Operational Readiness Reviews	Para. 4.3.4.2
CNRB Meeting Minutes	Para. 4.3.4.5
NRC Correspondence	Para. 4.3.4.5
Corrective Action Documentation that is considered to be a Significant condition Adverse to Quality (SCAQ)	Para. 4.3.4.5
Licensee Event Reports	Para. 4.3.4.4
NRC Inspection Reports	Para. 4.3.4.5
Corrective Action Summary Print Out	Para. 4.3.4.5
Restart Plan Activity Documentation	N/A
Davis-Besse Nuclear Quality Assurance Audits and Surveillances	Para. 4.3.4.5

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Attachment 3

COMMITMENT LIST

The following list identifies those actions committed to by the Davis-Besse Nuclear Power Station (DBNPS) in this document. Any other actions discussed in the submittal represent intended or planned actions the DBNPS. They are described only for information and are not regulatory commitments. Please notify the Manager - Regulatory Affairs (419-321-8450) at the DBNPS of any questions regarding this document or associated regulatory commitments.

COMMITMENTS	DUE DATE
None	