

OCT 29 1986

MEMORANDUM FOR: James G. Partlow, Director
Division of Inspection Programs
Office of Inspection and Enforcement

FROM: Albert F. Gibson, Director
Division of Reactor Safety

SUBJECT: COMMENTS ON POST-FIRE SAFE SHUTDOWN INSPECTION PROCEDURE 64100

As requested by your memorandum of October 1, 1986, the Region II staff has reviewed Procedure 64100. This procedure is well written and covers the essential elements of the 10 CFR 50 Appendix R safe shutdown and fire protection inspection program.

The principal recommendation is to prepare a separate inspection procedure to verify that the plant is being maintained in compliance with the requirements of Appendix R Sections III.G and .L. This reverification inspection should be conducted every three years and should be of a lesser scope than the initial verification inspection. Inspection Procedure 64100 should initially be conducted to verify compliance to Appendix R. Subsequent reinspections should not be conducted unless the reverification inspections identify major discrepancies. Although the proposed procedure permits this approach, the use of two separate procedures would more effectively obtain this goal. In addition, based on Region II's Appendix R inspection experience, it is recommended that the enclosed comments be incorporated into the final procedure.

Please let us know if you have any questions concerning our comments.

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Albert F. Gibson

Enclosure:
Comments on Proposed Procedure 64100

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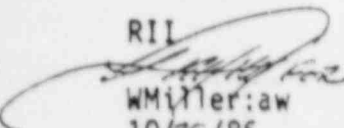
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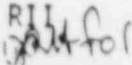
OCT 29 1986

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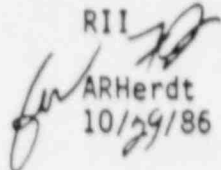
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ENCLOSURE

COMMENTS ON INSPECTION PROCEDURE 64100 POST-FIRE SAFE
SHUTDOWN INSPECTION PROCEDURE

The Region II staff has reviewed the proposed Procedure 64100 and offer the following comments:

1. An initial inspection of post-fire safe shutdown, emergency lighting and oil collection capability should be performed at all operating and near-term operating reactor facilities utilizing Inspection Procedure 64100.
2. Another inspection procedure should be issued for the reverification inspection to determine if the licensee is maintaining the plant in compliance with the requirements of Appendix R Sections III.G and .L. This reinspection verification should be conducted every three years and address the following:
 - a. Review a sample of plant modifications to safe shutdown components to verify that the separation and protection requirements of Appendix R Section III.G are being maintained.
 - b. Review a sample of the electrical fuses and breakers associated with safe shutdown components to verify that fuse/breaker coordination is being maintained and that plant modifications have not affected the previous analysis.
 - c. Review the safe shutdown procedures to verify that any changes or procedure revisions have not affected the post-fire safe shutdown capability.
 - d. Review the training program to verify that operations personnel receive training in the post-fire emergency shutdown procedures at least annually.
 - e. Ascertain whether changes affecting post-fire safe shutdown capability have been routinely incorporated into the plant's "Fire Hazard Analysis" and related documentation, Technical Specifications, and/or FSAR.
 - f. Review of the fire protection features associated with the safe shutdown features should be accomplished during the annual fire protection inspection utilizing Inspection Procedure 64704. Procedure 64704 should also be accomplished during the reverification inspection.

If major problems are identified during the reverification inspection, an indepth technical review and inspection should be conducted using Inspection Procedure 64100.

3. Inspection Procedure 64100 should be revised as follows:

- a. Add a footnote to Paragraph 02.01.a.4 to reference 04.7 and 04.10 for the required instrumentation.
- b. Revise Paragraph 02.02.a to incorporate the requirements of Appendix R, Section III.L.2.e by adding the following new paragraph 5:

"5. The supporting functions shall be capable of providing the process cooling, lubrication, etc., necessary to permit the operation of the equipment used for safe shutdown function."
- c. Review Paragraph 02.02.d to address spurious operation and transfer switch concerns as follows:

"d. Review the licensee's surveillance program for ensuring reliable operation of alternative or dedicated shutdown equipment. Establish that a well controlled post-fire safe shutdown has been shown to be achievable from outside of the control room. Furthermore, verify that the transfer of control for an equipment critical to safe shutdown is accomplished to insure that operation of essential equipment is not affected by fire induced spurious operation. Also, insure that upon transfer of control from the control room to the alternative location, critical circuits are protected by separate fusing and power supplies."
- d. Revise Paragraph 02.02.g by deleting the reference to shutdown time requirements. Performance of abnormal operating procedures in "real time" sequence is not an NRC requirement for operating plants. However, procedures are conducted in "real time" sequence at the plant's simulator. This paragraph should be revised to read as follows:

"g. Verify that adequate procedures for use of the alternative shutdown system exist. Ensure that adequate communications are available for the personnel performing alternative or dedicated safe shutdown. The licensee can be requested to demonstrate the adequacy of the alternative shutdown procedures by "walking through" the procedural steps."
- e. Add the following new Paragraph 02.02.i to cover fire damage repairs:

"i. Verify that the licensee has dedicated repair procedures, equipment and materials to accomplish restoration of the damage components required for cold shutdown."
- f. Renumber Paragraph 02.02 to 02.04.

- g. Revise Paragraph 02.02.b to incorporate the requirements of Generic Letter (GL) 86-10:
- "b. Verify that the oil collection system components have been designed so that there is reasonable assurance that they would withstand the safe shutdown earthquake (see Section III.0 of Appendix R) or that the RCP lube oil system and associated appurtenances are seismically designed to withstand the safe shutdown earthquake and that the licensee has submitted and NRR has approved an exemption for a non-seismically designed oil collection system (see GL 86-10, Enclosure 2, Question 6.1)."
- h. Revise Paragraph 03.01.c.1, Line 2 as follows: "... typically verified during an initial validation inspection." This change is necessary to delete the indication that only a "one time" inspection will be made.
- i. Revise Paragraph 03.01.c.2, Lines 3 and 4 as follows: "... validation inspection. Additional, more narrowly focused inspections may be required." This change is necessary to indicate that more than one or two inspections may be required.
- j. Expand Paragraph 03.01.c.3 to indicate the following acceptable compensatory measures:
- (1) Continuous fire watch is required for plant areas containing both redundant shutdown trains in which a fire suppression system is not installed/operable or one shutdown train is not enclosed within a three-hour fire rated barrier.
 - (2) Hourly fire watch patrol is required for: (a) plant areas provided with a fire detection and fixed automatic suppression system containing both redundant shutdown trains in which one train is not enclosed within a one-hour fire rated barrier; (b) plant areas containing both shutdown trains separated by greater than 20 feet and provided with an area fire detection and fixed automatic suppression system but the fire suppression system is not installed/operable; or, (c) plant areas containing both redundant shutdown train with one train enclosed within a one-hour fire rated barrier and an automatic fire suppression system is provided but a fire detection system is not provided or operable.
 - (3) Appropriate temporary damage control and post-fire shutdown procedures are required to compensate for the lack of permanent plant fire protection features or safe shutdown capability.
- k. Paragraph 03.01.c.6 should be deleted if a separate periodic reverification inspection procedure is issued.
- l. Delete Paragraph 03.01.e.3 if a separate periodic reverification inspection procedure is issued.

- m. Revise Paragraph 03.01.f to indicate that all inspection time should be charged to Procedure 64704. This is necessary to properly record the time credited to the inspection. For example, Procedures 37301, 37700, 37701 and 42700 are assigned to the Resident Inspector, Procedures 41400 and 41701 are assigned to the Quality Assurance Program Section, and Procedure 72701 is assigned to the Test Programs Section. Inspection time charged to these numbers are assigned to the overall inspection time for these groups and not fire protection.
- n. Revise Reference 04.06 to read: "Memorandum from R. J. Mattson to R. H. Vollmer dated July 2, 1982, Position Statement on Allowable Repairs on Alternative Shutdown and on Appendix R Requirement for Time Required to Achieve Cold Shutdown."
- o. Add a new Paragraph A to Appendix A as follows:
 - "A. Pre-Audit Materials. The Region should request that the licensee provide the following information to the inspection team at least two weeks prior to the inspection to permit the inspection team to properly prepare for this comprehensive and complex inspection:
 - (1) Piping and instrumentation (flow) diagrams for hot shutdown and cold shutdown systems alternative or dedicated shutdown and the reactor coolant pump oil collection system.
 - (2) Plant layout and equipment location drawings which identify the physical plant locations of hot shutdown and cold shutdown equipment.
 - (3) Color coded marked-up electrical raceway drawings which identify the cable routing of power and control circuits for those plant systems necessary to achieve and maintain hot shutdown.
 - (4) Single line AC and DC power and control electrical distribution diagrams.
 - (5) Plant layout drawings which identify fire area delineation and fire protection equipment locations.
 - (6) Marked-up plant layout drawings which identify the locations of emergency lighting units.
 - (7) Associated circuit analysis.
 - (8) Associated drawings which depict the physical and seismic design of reactor coolant pump oil collection system.
 - (9) Plant Operating Procedures which describe normal hot and cold shutdown from inside the control room, emergency hot and cold

shutdown from emergency control stations outside and independent of the control room, and shutdown operations which utilize alternative or dedicated shutdown capability and natural circulation.

- (10) Fire damage control and repair procedures for cold shutdown systems.

p. Renumber A, B, C, D, E, and F, to B, C, D, E, F and G.