TEMPORARY INSTRUCTION 2500/020, REVISION 2

INSPECTION TO DETERMINE COMPLIANCE WITH ATWS RULE, 10 CFR 50.62

2500/020-01 PURPOSE

To provide inspection guidance for determining compliance with the anticipated transients without scram (ATWS) rule, 10 CFR 50.62.

2500/020-02 OBJECTIVES

To determine that ATWS mitigating systems comply with the 10 CFR 50.62 rule requirements and that the effectiveness of the QA controls applied to major activities (design, procurement, installation, and testing), for ATWS equipment complies with Generic Letter (GL) 85-06, "QA Guidance For ATWS Equipment That is Not Safety Related," or to 10 CFR 50, Appendix B, and to assess the operational adequacy and reliability of ATWS equipment.

2500/020-03 BACKGROUND

03.01 Salem ATWS. On February 25, 1983 during startup of the Salem Unit 1 plant, both Westinghouse-type DB-50 reactor trip system (RTS) circuit breakers failed to open automatically when a valid trip signal was received on a low-low steam generator water level.

The Commission has reviewed several intermediate-term actions to be taken by licensees and applicants as a result of the Salem ATWS. The actions were developed on the basis of information contained in NUREG-1000, "Generic Implications of ATWS Events at the Salem Nuclear Power Plant." The Office of Nuclear Reactor Regulation (NRR) issued GL 83-28 to all licensees and applicants on July 8, 1983. Pursuant to 10 CFR 50.54(f), GL 83-28 requires the utilities to furnish the status of current conformance with the positions contained in this GL and the plans and schedules for any needed improvements. Initial responses to NRR were provided on or about November 5, 1983.

TI 2515/064, Revision 1, "Near-Term Inspection Followup to Generic Letter 83-28," was issued to provide inspection of the equipment classification, vendor interface, and maintenance programs for selected safety-related components.

03.02 10 CFR 50.62. On June 1, 1984 the Commission approved publication of a final rule, 10 CFR 50.62, regarding the reduction of risk from ATWS events for light-water-cooled nuclear power plants. At the same time, the Commission directed the staff to complete and

issue (in the form of a generic letter) QA guidance for equipment that is not safety related, but is encompassed by the ATWS rule. The ATWS rule requires that each licensee develop and submit (to the Director, NRR) a proposed schedule for meeting the requirements of the rule within 180 days after the QA guidance is issued. On April 16, 1985, NRR issued GL 85-06.

The enclosure to GL 85-06 provides the explicit QA guidance required by 10 CFR 50 62. The lesser safety significance of the equipment encompassed by 10 CFR 50.62, as compared to safety-related equipment, necessarily results in less stringent QA guidance. This lesser degree of stringency has been considered by eliminating requirements for involvement of parties outside the normal line organization and requirements for a formalized program and detailed record keeping for all quality practices.

2500/020-04 INSPECTION REQUIREMENTS

This inspection is to focus on the implementation of the ATWS rule requirements, 10 CFR 50.62, and on the effectiveness of the QA controls applied to ATWS activities. Emphasis should be placed on determining that management has documented a program for implementing the ATWS rule and, through observation of ATWS activities, that the program is properly implemented. The inspection should be consistent with the licensee's actions in responding to 10 CFR 50.62. This revision does not require a reinspection of those plants that have already been inspected by the initial TI, which generally focused on non-safety items. A survey of most of the regions has found that the inspections thus far have included a cursory review of the safety related aspects of the ATWS Rule (10 CFR 50.62) and therefore, reinspection is not necessary.

It is recognized that licensee responses to the 10 CFR 50.62 ATWS rule may encompass established controls/systems which have already been subjected to inspections in accordance with 10 CFR 50, Appendix B. Therefore, it is anticipated that inspection to this TI may only require a cursory review of these established safety related systems/components on a selective basis for confirmation; therefore, no increase in FTE hours for clarifying the addition of safety related and other editorial changes for this revised TI is considered necessary.

04.01 Licensee's Plan. Determine through the appropriate licensing project manager the licensee's schedule for meeting the requirements of the rule and the status of NRR acceptance of the licensee's proposed plan. In preparation for these inspections, the inspector should obtain copies of the licensee submittals with respect to the ATWS rule (10 CFR 50.62). If necessary, copies of these submittals can be obtained from the NRR licensing project manager. In addition, if technical or QA assistance is necessary in interpreting or carrying out this TI, the Electrical & Instrumentation and Control Branch or the Emergency Preparedness and Plant Support Branch should be contacted respectively.

04.02 Inspection Plan. Develop an inspection plan consistent with the licensee schedule in meeting the rule. The inspection plan should include an inspection of (1) completed work (provided the design activities and procurement and installation is complete), (2) either the design activities or procurement and installation activities, and (3) QA controls and personnel qualifications associated with implementing the ATWS plan as endorsed by the NRR safety evaluation.

04.03 Design Engineering. Verify that the designs and specifications conform to the licensee's plan as endorsed through the NRR safety evaluation for meeting the rule by reviewing selected areas of the design. The review should include, as appropriate, but not be limited to a verification that:

a. The systems do not compromise the safety features of existing safety-related protection systems.

b. The licensee's design as endorsed through the SER is properly being implemented.

c. The items delineated in the SER for resolution by the audit process have been completed.

04.04 Procurement and Installation of the ATWS Mitigating Equipment

a. Verify that selected procurement packages related to complying with the rule are consistent with the technical requirements of the design and licensee's plan as endorsed through the NRR safety evaluation.

b. Observe ATWS equipment to determine if receipt inspection, identification, and storage controls are being, or were, properly applied.

c. Verify that the utility is using, or used, the latest installation specifications, drawings, or procedures.

d. Verify that equipment being installed, or already in-place, meets the configuration specified (e.g., type, range, and material).

e. Verify that the identification designations for equipment are, or were, maintained during the installation process.

f. Verify by observation and/or document review that:

    1. The instrumentation and control equipment is being, or was, installed in the proper location.

    2. The entire instrument channel is being, or was, located, oriented, and supported as specified.

    3. The installers are using, or used, suitable equipment and tools.

    4. Adjacent equipment at the job site is properly protected.

    5. Housekeeping, radiological, and fire protection controls are being, or were, observed.

    6. The installation of the ATWS prevention/mitigation systems and equipment meet the plant physical separation criteria for maintaining electrical independence between redundant safety-related circuits and between safety-related circuits and non-safety-related circuits.

g. Confirm that the related inspections by utility personnel are being, or were, performed.

h. Verify that nonconformances are, or were, identified and corrected in a timely manner.

04.05 Confirmation of Completed Work

a. Verify that the licensee's ATWS design (including plant-specific elements) as endorsed through the NRR safety evaluation is completed and that the installed systems perform as specified in the design documents. This can be done by observing selected installed systems to determine that the design, installation, and testing requirements have been acceptably complied with and that the systems perform as required.

b. Verify that operating procedures have been appropriately revised and personnel trained to assure performance of installed systems.

c. Verify that appropriate surveillance and maintenance (i.e., corrective and preventative maintenance and post-maintenance inspection and testing) programs are in place and being properly implemented.

d. Verify that the systems are being routinely tested following installation in accordance with NRC requirements and/or plant procedure.

e. Verify that there are permanently installed means for bypassing the system during maintenance and testing with continuous indication of the bypass status in the control room.

f. Verify that once the mitigative action is initiated, the action goes to completion and that subsequent return to normal operation requires deliberate action.

g. Verify that the ATWS mitigation system can be manually initiated from the control room as determined by plant-specific reviews.

04.06 Quality Assurance and Qualifications

a. Verify that the licensee has a documented ATWS program plan either under the 10 CFR 50, Appendix B, QA Program or provided in plant procedures that meet the QA guidance in the enclosure to Generic Letter 85-06 (Attachment 1).

b. Verify that the licensee's QA controls are being properly implemented by observing the QA controls during the inspection of activities described in Section 04.03 through 04.05 of this TI.

c. Verify personnel responsible for supervising and implementing the ATWS plan are knowledgeable and capable of implementing the plan.

This can be verified through discussions and observations of a supervisor and plant personnel involved in ATWS activities.

2500/020-05 INSPECTION GUIDANCE

Certain plants have installed all or some portions of the ATWS equipment (See 49 FR 26036, p. 26044, Attachment 2, for a list of the equipment required by 10 CFR 50.62). For example, some utilities have installed diverse auxiliary feedwater initiation circuitry and alternate rod injection equipment, modified reactor coolant recirculating pumps to trip automatically, or modified or added standby liquid control system equipment. In addition, plants that have not yet installed this equipment are relying on their nuclear steam supply system (NSSS) vendors to design and procure the equipment. In either case, inspectors should direct their inspection activities to the ongoing ATWS activities, which might be limited to maintenance and surveillance activities. Inspectors should use judgment to determine the appropriate phase in the inspection cycle to minimize inspection resources and obtain the most significant observations of utility practices. The systems identified in the rule and the licensee's plan should be relied on in selecting the sample of ATWS equipment to be inspected. The term, "standard industry practice" was used in GL 85-06 to describe the practices embodied in the action and activities described in applicable equipment technical manuals.

A survey of most of the regions has found that cursory review of selected safety related systems/components with respect to the ATWS rule would have minimal impact of inspection hours; therefore, no increase in FTE hours is necessary as a result of this revision.

2500/020-06 REPORTING REQUIREMENTS

The appropriate regional office will document the findings and actions taken in an inspection report, either separately or combined with other inspections, and forward copies to the Director, Division of Licensing Project Management, and the Director, Division of Engineering, NRR.

2500/020-07 EXPIRATION

This temporary instruction will remain in effect until completed or determined to be no longer valid and closed out during the Browns Ferry Unit 1restart.

2500/020-08 NRR CONTACT

Any questions regarding this temporary instruction should be addressed to Doug Coe, 301-415-2040.

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