

APPENDIX 7A

PROGRAM ELEMENT DESCRIPTIONS
RESULTING FROM THE IMPLEMENTATION
OF THE MAY 6, 1983 ORDER

Subject: Reactor Trip Breaker ATWS Event

7A.1 Introduction

On May 6, 1983, the Nuclear Regulatory Commission issued an Order modifying the operating license for the Salem Generating Station, Units 1 and 2. The Order referenced a series of letters in which PSE&G had submitted its corrective action program in response to the reactor trip breaker failures. This corrective action program included short term, interim and long term actions. Corrective actions were also identified to the NRC in response to Generic Letter 83-28.

Subsequently, the Order was modified by letter dated January 31, 1984 changing the implementation schedule for certain long term actions, and again on March 18, 1986, removing the requirement to submit Nuclear Oversight Committee reports on a quarterly basis. The March 18, 1986 letter also stated that the terms of the Order have been satisfactorily completed. The long term corrective actions implemented in response to this event will continue to be maintained as required by the Order. (Refer to NRC letter dated June 12, 1992.) These actions are provided in the following Sections:

7A.2 Training

1. The difference between demand and confirmatory indications for the Reactor Protection System (RPS) shall be an integral part of initial and re-qualification training for all licensed operators.
2. The procedural steps to be taken in response to an ATWS event shall be an integral part of simulator training for all licensed operators.
3. Identifying the location and type of RPS indicators and alarms shall be an integral part of simulator training for all licensed operators.

4. First-line supervisory training will be provided to all individuals, except licensed operators, within 12 months of their assumption of supervisory duties within the station. Individuals filling positions that require the acquisition of a Senior Reactor Operator (SRO) license will complete the program within 12 months of the NRC examination date. This permits them the same time allowance for program completion as the remaining supervisory classifications while allowing them time to complete license training.
5. Technical training will be provided to support the professional staff not in station positions.
6. A formal training program will be provided for senior level supervisory personnel. This program shall also offer refresher/requalification training for management and senior supervisory personnel.
7. First-line supervisory training will address the classification of procurement documents as well as the initiation, classification, processing and closeout of work orders with emphasis on QA requirements, test/retest requirements and interdepartmental coordination.

7A.3 Procurement and Management

1. The procurement specification for reactor trip breakers shall require:

All undervoltage trip attachments (UTAs) have incorporated all design changes identified in Westinghouse Switchgear Division Procedure NCD-ELEC-18.

All UTAs to be lubricated per Westinghouse Technical Bulletin NSD-TB-83-02.

The manufacturer to mount on a test breaker and electrically test each UTA twenty-five (25) consecutive times without failure.

The manufacturer to seal the two (2) cover bolts on the moveable core cover and the reset lever spring adjustment screw such that future removal of cover bolts or future screw adjustment is detectable.

The manufacturer to submit a Certificate of Conformance documenting the above items.

2. The procurement program will require item classifications by procurement engineering personnel with independent technical verification (peer review) for Important to Safety and augmented quality applications performed by qualified personnel.

3. Nuclear Oversight (NOS) personnel will conduct periodic audits of the procurement program to ensure proper item classification, application of procurement procedures and practices, as well as, to verify procedural adherence by appropriate personnel.
4. On a sample basis, NOS shall perform a detailed review of safety/non-safety related work orders to assure compliance to program requirements such as proper classification, etc.
5. A member of the Independent Safety Engineering Group (Safety Review Group) will serve on the Station Operations Review Committee (SORC). The Safety Review Group was subsequently replaced by an Onsite Independent Review function performed by the NOS organization. NRC approval was documented in SER dated March 21, 1997.
6. PSEG Nuclear will establish a Nuclear Review Board (NRB) to provide management with an independent basis for evaluating the effectiveness of nuclear safety. The committee should consist of at least 5 members and shall consist of nuclear utility operations executives, former regulators and internal management.
7. The NRB shall submit reports to the President and Chief Nuclear Officer following each quarterly meeting. The reports shall include an evaluation of overall management attention to nuclear safety. NRB meeting frequency was subsequently revised to a minimum of twice a year. NRC approval was documented in SER dated March 21, 1997.

7A.4 Operating Procedures

1. All procedures associated with a reactor trip have been revised to require the operator to manually trip the reactor anytime he receives a demand first out annunciator and verification of this condition on the Reactor Protection Status Panel.
2. The Shift Routine Logs shall require that an Overhead Annunciator Control console and Status Panel Alarm/Indicator Check be performed at the beginning of each shift.
3. A dedicated communicator shall be assigned to each shift.
4. The directive utilized by the Operations Department to verify operability of safety related equipment shall require that testing in accordance with the Technical Specifications is completed prior to declaring equipment operable.
5. Maintain program for completion of Post-Trip reviews.

7A.5 Maintenance and Surveillance

1. PSEG Nuclear has established a program to provide traceability on the reactor trip breakers. This program ensures traceability on all the work to a particular breaker and its location.
2. Cleaning of the breakers and Westinghouse recommended lubrication is performed on the undervoltage trip attachments (UTA) during semi-annual maintenance.
3. Cleaning of the breaker cabinets is performed during each refueling outage. The circuit breaker rooms are cleaned by a custodian on normal work days.
4. The maintenance procedure incorporates a range of acceptable dropout voltages and instruction to replace any devices which fall outside the specified range. In addition, new UTAs installed in the plant will be tested 10 times with a 30 minute interval between each test and any devices which fail will be rejected.
5. The following tests will be performed before and after the semi-annual maintenance:
 - 3 UTA trip timing tests
 - 3 shunt trip tests, and
 - 3 closure timing tests.
6. A bar force (static trip) measurement and an output force (added weight) measurement will be performed after semi-annual testing and after UTA replacement.
7. The commitment for NRC notification is addressed by notation to Table 3.3-1 of the Salem Technical Specifications.
8. Surveillance testing of the main reactor trip breakers utilizing the UTA has been increased to a frequency specified in Technical Specification surveillance requirement 4.3.1.1.1.
9. Surveillance testing of the main and bypass reactor trip breakers utilizing the shunt trip will be performed on a frequency specified in Technical Specification surveillance requirement 4.3.1.1.1.

10. Surveillance testing utilized to prove operability of the reactor trip breakers on a frequency specified in Technical Specification surveillance requirement 4.3.1.1.1 will provide for independent testing of the shunt and undervoltage attachments and operation of the breakers utilizing the manual trip switches.
11. Modifications to I&C procedures which are to be performed on a frequency specified in Technical Specification surveillance requirement 4.3.1.1.1, have been made to provide for the utilization of the Sequence of Events recorder to monitor the response time of the main trip breakers for the Solid State Protection System. This data will be recorded as part of these procedures. Included in these procedures will be specific acceptance criteria requiring that if exceeded, the NRC will be notified (amendment 114/96).
12. In addition, I&C procedures have been modified to include time response testing of both the main and bypass reactor trip breakers. This surveillance testing will continue to be performed on an 18 month interval prior to restart after refueling.

7A.6 Control of Vendor Technical Documents

PSEG Nuclear shall establish a Vendor Technical Document Control Program that includes the following elements:

1. Procedures regarding control of vendor manuals.
2. Review of vendor manuals by engineering personnel to determine applicability to installed equipment.
3. Identification of manuals applicable to Q-listed equipment.
4. Requirement that all safety related vendor manuals be incorporated under the Vendor Technical Document Control Program. NOTE: Only key safety-related vendor manuals will be included as part of the Vendor Re-Contact Program.
5. Deleted.

6. Review of manual revisions and new manual issues by engineering personnel to ensure incorporation of applicable new information into applicable procedures.
7. Deleted.
8. Establish and maintain an interface program with NSSS vendors and other vendors of key safety-related components to assure receipt of the most recent applicable information that includes the following:
 1. Establish and maintain information update programs with key vendors such as Westinghouse, ALCO (Diesel Mfr.), General Electric, etc.
 2. Participate in the INPO EPIX program.
 3. Establish a focal point within the Nuclear Department for receiving and processing all uncontrolled vendor technical information received on-site for the Salem Units.