



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

January 5, 1995

MEMORANDUM TO: James M. Taylor
Executive Director for Operations

FROM: William T. Russell, Director *W. Russell*
Office of Nuclear Reactor Regulation

SUBJECT: NRR STAFF ACTIONS RESULTING FROM THE DIAGNOSTIC EVALUATION
AT SOUTH TEXAS PROJECT (WITS-93133)

In my memorandum of June 14, 1994, I described the status of NRR actions resulting from the Diagnostic Evaluation Team inspection at the South Texas Project. Two items were open at that time (Actions 1.b and 4). In your July 26 memorandum, you requested that all NRR open items be discussed in an annual report, to be submitted in January of each year, until all open items are resolved. Your requested update follows:

Action 1.b: Evaluate generic implications of assigning multiple conflicting responsibilities.

The Human Factors Assessment Branch (HHFB) addressed this item that was specific to South Texas by including the DET's observations with the operational data used in a continuing NRC research project, "Nuclear Power Plant Shift Staffing Levels." The project team will establish a technical basis for minimum shift staffing levels of licensed and nonlicensed personnel at nuclear power plants, confirming the adequacy of the requirements of 10 CFR 50.54(m), or will establish a regulatory basis for modifying these requirements. The project team will analyze the workload and functions allocated for licensed and nonlicensed personnel both inside and outside the control room for transient responses that involve a high workload. This research project is being tracked under NRR Human Factors Research User Need 6, "Shift Staffing Levels."

The staff and the Brookhaven National Laboratory (BNL) project team discussed the status and plans for the project throughout 1994. The BNL project team is also evaluating operational data from other offnormal events where shift crews appear to have been challenged in their ability to mitigate events. In August through October, the project team visited seven nuclear power plants to collect data on current staffing practices needed for both licensed and non-licensed shift personnel to respond effectively to events. Representatives from NRR and RES accompanied the project team on several of these visits. The team focused on the time period from immediately after the event begins until personnel arrive to augment the staff. The team considered the following topics during the site visits:

- Tasks necessary to support emergency operating procedures (EOPs) and the implementation of supporting procedures

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- Allocation of tasks to positions
- Regulatory and administrative requirements for minimum staffing for each position with emergency task responsibilities
- Excessive workload or conflicting task requirements
- Range and frequency of offnormal staffing levels for each position
- Applicable training to do tasks with normal and reduced staffing levels
- Changes in staffing levels, administrative controls, training, and alternative task allocation as corrective actions for staffing concerns

The seven sites visited are a representative sample of plants in the U.S. commercial nuclear industry for plant type, age and number of units at each site. The team collected data by reviewing plant documents, indepth sequential discussion of two accident scenarios, walking through specific tasks related to the scenarios outside the control room, and interviewing individuals from various groups and levels at the site.

The staff is evaluating the results of the surveys to gain specific insight and to determine future staff actions and will complete the project in September 1995.

Action 4: Assess tornado dampers and their periodic testing

The Plant Systems Branch (SPLB) evaluated staff Action Item 4, "Assessment of Tornado Dampers and Their Periodic Testing," which was established during the DET inspection at the South Texas Project. The Probabilistic Safety Assessment Branch (SPSB) assisted SPLB by assessing whether the components in the HVAC system dampers and fans are of significance to risk. If any risk significance was found, further study would be necessary to address the tornado damper issue. SPSB found no generic concern with damper testing because the dampers and fans account for only a small percentage of the overall core damage frequency (Attachment).

This conclusion is also supported by NUREG-1427 "Regulatory Analysis for the Resolution of Generic Issue 143: Availability of Chilled Water Systems and Room Cooling," in which the staff concluded that no action is needed for HVAC and room cooler systems because they contribute little to core damage frequency.

Although the risk assessments revealed no justification for a backfit to address requirements for testing tornado dampers or other dampers, SPLB will issue an information notice before the end of the first quarter of 1995 to describe the operational problems with dampers at South Texas that were generally attributable to an inadequate testing program. The information notice will also describe an inadequate design condition at River Bend where tornado dampers in the exhaust system would not reopen after a tornado event

while the exhaust fans were running. This condition resulted in diesel generators becoming inoperable with no operator action. The information notice will alert other licensees who may have overlooked tornado dampers in their ventilation testing and maintenance programs or may have overlooked their importance after a tornado because tornado dampers may not have been considered part of the ventilation system. However, these dampers are required to be operational before a tornado and usually are required to be open afterwards for the plant to be within its design basis. An inoperable damper will usually place a plant in an unanalyzed condition in the event of a tornado strike.

The licensee for South Texas adequately addressed the maintenance issue by revising the preventive maintenance (PM) program to periodically check the tornado dampers every 2 years or at each refueling outage depending on the specific damper function. This surveillance includes inspecting, cleaning, lubricating, and stroking the damper while taking dynamometer measurements of the spring forces. The original surveillance plan at the time of the event was to inspect and lubricate the tornado dampers every 10 years.

Follow-up Action Item 4 is closed because of the proposed issuance of an information notice and the actions taken at South Texas. The staff plans no further actions after issuing the information notice.

Attachment: Memorandum dated 9/21/94

cc w/att:
E. Jordan, AEOD
J. Callan, Region IV
S. Rubin, AEOD