



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

December 1, 1994

50-498

MEMORANDUM TO: William D. Beckner, Director
Project Directorate IV-I
Division of Reactor Projects III/IV

FROM: Conrad E. McCracken, Chief
Plant Systems Branch
Division of Systems Safety and Analysis

SUBJECT: INPUT TO JANUARY 1995 REPORT - ACTION ITEM 4 "TORNADO DAMPERS" FROM DIAGNOSTIC EVALUATION AT SOUTH TEXAS (DRPW WITS ITEM 9300133)

The Plant Systems Branch (SPLB) has completed its evaluation of staff Action Item No. 4 "Assessment of Tornado Dampers and Their Periodic Testing" which was identified during the Diagnostic Evaluation Team (DET) inspection at the South Texas Project. The Probabilistic Safety Assessment Branch (SPSB) was asked to assist SPLB by performing a first level assessment of the risk impact of HVAC system dampers and fans. The object of this assessment was to determine the significance, if any, of the risk associated with HVAC system components in general. If any risk significance was found, further study would be necessary to address the tornado damper issue. The results of the SPSB assessment showed that a generic concern regarding damper testing is not justified (See attached September 21, 1994 memorandum from EJButcher to CEMcCracken). This conclusion is based on the low risk impact (small percentage of the overall core damage frequency) of HVAC system dampers and fans in terms of the core damage frequency reduction importance measure. 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," which concluded that no action should be taken with respect to HVAC/room cooler systems based on the small contribution to core damage frequency.

Although the risk assessments have showed that a backfit to address requirements for testing tornado dampers or other dampers could not be justified, SPLB will issue an information notice (before the end of the first quarter of the calendar year 1995) identifying the damper operational problems which occurred at South Texas that were generally attributable to an inadequate testing program. The information notice would also describe an inadequate design condition at River Bend where certain (exhaust system) tornado dampers would not reopen (resulting in diesel generators becoming inoperable with no operator action) after a tornado event while the exhaust fans were running. The information notice would alert other licensees that may have overlooked tornado dampers in their ventilation testing/maintenance programs and/or overlooked the importance of their post-tornado role because

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the dampers may not have been considered as an actual part of the ventilation system. However, these dampers are required to be operational prior to a tornado and usually required to be open post-tornado in order for the plant to be within its design basis. The inoperability of one of these dampers will usually place a plant in a potentially unanalyzed condition (in the event of a tornado strike).

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

Based on the proposed issuance of an information notice and the actions taken at South Texas, we consider follow-up Action Item No. 4 to be closed. No further staff actions are planned after the issuance of the information notice.

Docket No. 50-498 and 50-499

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