



**UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-4005**

December 12, 2003

MEMORANDUM TO: Neil F. O'Keefe, Senior Reactor Inspector

FROM: Dwight D. Chamberlain, Director /RA/
Division of Reactor Safety

SUBJECT: CHARTER FOR THE NRC SPECIAL INSPECTION TEAM AT
SOUTH TEXAS PROJECT - REVIEW OF LICENSEE ACTIONS
RELATED TO THE FAILURE OF STANDBY DIESEL GENERATOR
NO. 22

On December 9, 2003, Standby Diesel Generator No. 22 experienced a significant mechanical failure during testing that resulted in ejection of a connecting rod. Standby Diesel Generator No. 22 previously experienced a significant mechanical failure on November 28, 1989, that also resulted in ejection of a connecting rod from a different cylinder. The cause of the failures may or may not be similar. Because of the potential generic implications, the potential that the failures may be repetitive and the risk significance of the diesel failure along with a potential for a common mode failure mechanism, a special inspection team is being chartered. Although the risk significance of the failure of a single diesel generator may be low at South Texas Project, the uncertainties associated with the cause and the potential generic implications, including the possibility for a common mode failure, result in the potential for greater risk significance. These considerations warrant a special inspection team review. You are hereby designated as the team leader.

A. Basis

On December 9, 2003, control room operators at South Texas Project, Unit 2, were conducting a monthly surveillance on Standby Diesel Generator No. 22. At 10:18 a.m. (CST) the diesel reached full load. A trouble alarm at 10:38 a.m indicated that the diesel had less than 5 psi lube oil pressure and the output breaker had tripped open. Control room operators attempted unsuccessfully to shut the diesel down from the control room. Equipment operators in the diesel room also attempted unsuccessfully to shut down the diesel using the local emergency stop pushbuttons. The equipment operators then successfully shut the diesel down by shutting off the fuel supply to the diesel. Because of reports of smoke in the diesel room, the fire brigade responded but reported that they found no flames. The licensee staff reported that the diesel had ejected part of a piston, the articulating rod, and other parts from the No. 9 right cylinder.

During a conference call conducted December 10, 2003, between the licensee, NRR, and Region IV, the licensee stated their intent to identify the root cause of the failure, and to evaluate the extent to which the condition could affect the remaining standby diesels at South Texas Project.

A special inspection team will be dispatched to better understand the cause of the diesel failure, the extent of the condition, the potential generic implications, and the corrective actions proposed by the licensee.

A preliminary risk analysis performed by a Senior Reactor Analyst resulted in an estimated Incremental Conditional Core Damage Probability greater than $1 \text{ E-}06$.

B. Scope

Specifically, the team is expected to perform data gathering and fact-finding in order to address the following:

1. Develop a chronology of diesel failure and operator response.
2. Review and assess the adequacy of operator response to the emergency diesel failure.
3. Review the licensee's root and probable cause determination for completeness and accuracy including review of any relevant plant-specific and industry (foreign and domestic) operating experience, including previous diesel failures.
4. Review the circumstances associated with the diesel failure to identify potential common failure modes and generic safety concerns.
5. Review records associated with the maintenance history for the diesel generators at South Texas Project, including previous mechanical failures.
6. Review the licensee's program for periodic monitoring and maintenance of the standby diesels, including inspection and assessment techniques and scope, periodicity, and the results of past inspections.
7. Review and assess the adequacy of the licensee's evaluation of extent-of-condition as it relates to the other standby diesels in Units 1 and 2.
8. Review and assess the licensee's prompt and long-term corrective actions to address the root and probable causes of the condition. Assess the adequacy of repair activities and independently verify information submitted in support of NRC review of any regulatory relief requests.
9. If applicable, review and assess the corrective actions for past similar failures, including vendor recommended actions to prevent such failures.

10. Review and assess the licensee's planned testing program to confirm the operability of No. 22 Standby Diesel Generator following repair activities.

C. Team Members

- Neil O'Keefe, Team Leader
- Gilbert Guerra, Resident Inspector

D. Guidance

This memorandum designates you as the special inspection team leader. Your duties will be as described in Inspection Procedure 93812, "Special Inspection." The team composition has been discussed with you directly. During performance of the special inspection activities assigned to them, designated team members are separated from their normal duties and report directly to you. The team is to emphasize fact finding in its review of the circumstances surrounding the event, and it is not the responsibility of the team to examine the regulatory process. Safety concerns identified that are not directly related to the event should be reported to the Region IV office for appropriate action.

You should notify the licensee and the team should begin inspection activities on or before December 15, 2003, based on the licensee's schedule of activities. You should conduct an entrance meeting with the licensee at the appropriate time at the site. A report documenting the results of the inspection, including findings and conclusions, should be issued within 30 days of the exit meeting conducted at the completion of the inspection. While the team is active, you will provide periodic status briefings to Region IV management.

This Charter may be modified should the team develop significant new information that warrants review. Should you have any questions concerning this Charter, contact Dwight Chamberlain, Director, Division of Reactor Safety, at (817) 860-8180.

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