

- (4) Emergency Planning (Section 13.3, SER and SSERs 2, 3, 4, and 5)

In the event that the NRC finds that the lack of progress in completion of the procedures in the Federal Emergency Management Agency's final rule, 44 CFR Part 350, is an indication that a major substantive problem exists in achieving or maintaining an adequate state of emergency preparedness, the provisions of 10 CFR Section 50.54(s)(2) will apply.

- (5) Steam Generator Tube Rupture (Section 15.6.3, SER and SSER 3)

By March 1, 1988, GPC shall submit for NRC review a revised plant-specific steam generator tube rupture analysis based on the Westinghouse Owner's Group generic resolution, which includes radiological consequence analyses, analysis of steamline static load in the event of overfill, and justification that systems and components credited in the analysis to mitigate accident consequences are safety related.

- (6) ~~Transamerica Delaval, Inc. (TDI) Diesel Generators~~  
(Section 9.5.4, SER and SSERs 4 and 5)

*Deleted*

GPC shall implement the TDI diesel generator requirements as specified in Attachment 1. Attachment 1 is hereby incorporated into this license.

- (7) NUREG-0737 Items

- a. Compliance with NUREG-0737, Item II.F.2 (Section 4.4.8, SER and SSERs 1 and 4)

In accordance with NUREG-0737, Item II.F.2, GPC shall submit the proposed reactor vessel level instrumentation system (RVLIS) report by June 1, 1987.

- b. Supplemental Report on Safety Parameter Display System (Section 18.2, SSER 6)

GPC shall submit by March 1, 1988, a supplemental report on the safety parameter display system as discussed in Section 18.2 of SSER 6.

- c. Supplemental Summary Report on Detailed Control Room Design Review (Section 18, SSER 5)

GPC shall submit by March 1, 1988, a Supplemental Summary Report on the detailed control room design review discussing:

1. the final results of the remaining control room surveys (ambient noise; illumination; heating, ventilation, and air conditioning; plant safety monitoring system computer survey; automatic turbine supervisory instrumentation computer survey; and communications) and the resolution of any human engineering discrepancies (HEDs) resulting from these surveys

H. Reporting to the Commission

Except as otherwise provided in the Technical Specifications or Environmental Protection Plan, GPC shall report any violations of the requirements contained in Section 2.C. of this license in the following manner: initial notification shall be made within twenty-four (24) hours to the NRC Operations Center via the Emergency Notification System with written follow-up within 30 days in accordance with the procedures described in 10 CFR 50.73(b), (c), and (e).

- I. The licensees shall have and maintain financial protection of such type and in such amounts as the Commission shall require in accordance with Section 170 of the Atomic Energy Act of 1954, as amended, to cover public liability claims.
- J. This license is effective as of the date of issuance and shall expire at midnight on January 16, 2027.

FOR THE NUCLEAR REGULATORY COMMISSION



Harold R. Denton, Director  
Office of Nuclear Reactor Regulation

Enclosures:

1. Attachment 1 - ~~TDI Requirements~~
2. Appendix A - Technical Specifications
3. Appendix B - Environmental Protection Plan
4. Appendix C - Antitrust Conditions

*Deleted*

Date of Issuance: March 16, 1987

ATTACHMENT 1 TO LICENSE NPF-61

TDI DIESEL ENGINE REQUIREMENTS

1. Changes to the maintenance and surveillance programs for the TDI diesel engines, as identified in Section 9.5.4.1 of Supplement 4 to the Vogtle Electric Generating Plant Safety Evaluation Report, shall be subject to the provisions of 10 CFR 50.59.

The frequency of the major engine overhauls referred to in the license conditions below shall be consistent with Section IV.1. "Overhaul Frequency" in Revision 2 of Appendix II of the Design Review/Quality Revalidation report which was transmitted by letter dated May 1, 1986, from J. George, Owners Group, to H. Denton, NRC.

2. Connecting rod assemblies shall be subjected to the following inspections at each major engine overhaul:
  - a. The surfaces of the rack teeth shall be inspected for signs of fretting. If fretting has occurred, it shall be subject to an engineering evaluation for appropriate corrective action.
  - b. All connecting-rod bolts shall be lubricated in accordance with the engine manufacturer's instructions and torqued to the specifications of the manufacturer. The lengths of the two pairs of bolts above the crankpin shall be measured ultrasonically pre- and post-tensioning.
  - c. The lengths of the two pairs of bolts above the crankpin shall be measured ultrasonically prior to detensioning and disassembly of the bolts. If bolt tension is less than 93% of the value at installation, the cause shall be determined, appropriate corrective action shall be taken, and the interval between checks of bolt tension shall be re-evaluated.
  - d. All connecting-rod bolts shall be visually inspected for thread damage (e.g. galling), and the two pairs of connecting rod bolts above the crank pin shall be inspected by magnetic particle testing (MT) to verify the continued absence of cracking. All washers used with the bolts shall be examined visually for signs of galling or cracking, and replaced if damaged.
  - e. Visual inspection shall be performed of all external surfaces of the link rod box to verify the absence of any signs of service induced distress.
  - f. All of the bolt holes in the link rod box shall be inspected for thread damage (e.g., galling) or other signs of abnormalities. In addition, the bolt holes subject to the highest stresses (i.e., the pair immediately above the crankpin) shall be examined with an appropriate nondestructive method to verify the continued absence of cracking. Any indications shall be recorded for engineering evaluation and appropriate corrective action.

3. The cylinder blocks shall be subjected to the following inspections at the interval specified in the inspections:

- a. Cylinder blocks shall be inspected for "ligament" cracks, "stud-to-stud" cracks and "stud-to-end" cracks as defined in a report\* by Failure Analysis Associates, Inc. (FaAA) entitled, "Design Review of TDI R-4 and RV-4 Series Emergency Diesel Generator Cylinder Blocks" (FaAA report no. FaAA-84-9-11.1), dated December 1984. (Note that the FaAA report specifies additional inspections to be performed for blocks with "known" or "assumed" ligament cracks). The inspection intervals (i.e., frequency) shall not exceed the intervals calculated using the cumulative damage index model in the subject FaAA report. In addition, the inspection method shall be consistent with or equivalent to those identified in the subject FaAA report.
  - b. In addition to inspections specified in the aforementioned FaAA report, blocks with "known" or "assumed" ligament cracks (as defined in the FaAA report) shall be inspected at each refueling outage to determine whether or not cracks have initiated on the top surface exposed by the removal of two or more cylinder heads. This process shall be repeated over several refueling outages until the entire block top has been inspected. Liquid-penetrant testing or a similarly sensitive nondestructive testing technique shall be used to detect cracking, and eddy current shall be used as appropriate to determine the depth of any cracks discovered.
  - c. If inspection reveals cracks in the cylinder blocks between stud holes of adjacent cylinders ("stud-to-stud" cracks) or "stud-to-end" cracks, this condition shall be reported promptly to the NRC staff and the affected engine shall be considered inoperable. The engine shall not be restored to "operable" status until the proposed disposition and/or corrective actions have been approved by the NRC staff.
4. The following air roll test shall be performed as specified below, except when the plant is already in an Action Statement of Technical Specification 3/4.8.1, "Electric Power Systems, A.C. Sources":

The engines shall be rolled over with the airstart system and with the cylinder stopcocks open prior to each planned start, unless that start occurs within 4 hours of a shutdown. The engines shall also be rolled over with the airstart system and with the cylinder stopcocks open after 4 hours, but not more than 8 hours after engine shutdown and then rolled over once again approximately 24 hours after each shutdown. (In the event an engine is removed from service for any reason other than the rolling over procedure prior to expiration of the 8-hour or 24-hour periods noted above, that engine need not be rolled over while it is out of service. The licensee shall air roll the engine over with the stopcocks open at the time it is returned to service). The origin of any water

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\* This report was transmitted to H. Denton, NRC, from C. L. Ray, Jr., TDI Owners Group, by letter dated December 11, 1984.

detected in the cylinder must be determined and any cylinder head which leaks due to a crack shall be replaced. The above air roll test may be discontinued following the first refueling outage subject to the following conditions:

- a. All cylinder heads are Group III heads (i.e., cast after September 1989).
  - b. Quality revalidation inspections, as identified in the Design Review/Quality Revalidation report, have been completed for all cylinder heads.
  - c. Group III heads continue to demonstrate leak-free performance. This should be confirmed with TDI prior to deleting air roll tests.
5. Periodic inspections of the turbochargers shall include the following:
- a. The turbocharger thrust bearings shall be visually inspected for excessive wear after 40 non-primed starts since the previous visual inspection.
  - b. Turbocharger rotor axial clearance shall be measured at each refueling outage to verify compliance with TDI/Elliott specifications. In addition, thrust bearing measurements shall be compared with measurements taken previously to determine a need for further inspection or corrective action.
  - c. Spectrographic engine oil and ferrographic engine oil (wear) analysis shall be performed quarterly to provide early evidence of bearing degradation. Particular attention shall be paid to copper level and particulate size which could signify thrust bearing degradation.