



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

JUL 22 1985

Docket No.: 50-440

Mr. Murray R. Edelman, Vice President  
Nuclear Operations Group  
The Cleveland Electric  
Illuminating Company  
Post Office Box 5000  
Cleveland, Ohio 44101

Dear Mr. Edelman:

Subject: Post 100 Hour Inspections and Tests of TDI Diesel Generators

In your letter dated February 8, 1985, you described the inspections you plan to perform on the TDI diesels upon completion of the 100 hour pre-service operational tests. In subsequent discussions with the staff, you described the engine tests you plan to perform upon engine reassembly after completing the 100 hour inspections as recommended by the TDI service representative. The staff understands that these tests will consist of the following steps:

1. Record a cold crankshaft deflection check.
2. Check engine over for normal conditions - no fuel oil, lube oil, air or jacket water leaks.
3. Start engine, run in the no load condition for one hour. Check for fuel oil, lube oil, air and jacket water leaks.
4. Shut down the engine. Wait 15 minutes and remove side covers. Check for hot spots on rods, bearings, piston skirts and liners. Inspect to assure there are no jacket water leaks around the cylinder liners. Close side covers.
5. Start engine and run with no load for 15 minutes. Load to 20% and run for one hour.
6. Increase the load to 50% and run for one hour.
7. Increase load to 100% for 2-3 hours to allow temperatures to equalize. Record cylinder temperatures and pressures along with other critical engine parameters.
8. Shut down the engine after decreasing load and allowing cylinder temperatures to fall below 500°F. Wait 15 minutes, remove side covers and check for hot spots. Perform a hot crankshaft deflection. Replace side covers.

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Mr. Murray Edelman

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The staff has reviewed the post 100 hour inspections and tests you plan to perform and has the following comments:

1. The turbocharger to be inspected should be the one with the highest recorded exhaust temperatures during the 100 hour run. The nozzle rings on the remaining three turbochargers should be inspected by boroscope if access permits.
2. Boroscope through the cylinder port and inspect piston crown (for oil impingement), liner surfaces, and head where accessible. Also, inspect for stellite failures or valve burning.
3. Check the cylinder block cover gaskets for oil leaks during engine operation.
4. Inspect both intake and exhaust valve tappets.
5. Before shutting engine down, check for any motion between the engine base/chock plates/support rails.
6. Visually check block top for cracks where heads are removed.
7. Visually check turbocharger support bolts and welds for cracks.
8. Visually check for cracks in the Turbocharger/Intercooler air box nozzles.
9. Visually check for convolution cracks and bolt failures in the exhaust flex joints.
10. Check lube oil for contaminants.
11. Check jacket water for pH, contaminants and discoloration.

By letter dated May 13, 1985, the staff previously approved the post 100 hour reassembly testing recommended by TDI.

Sincerely,

**Original signed by:**  
**B. J. Youngblood**

B. J. Youngblood, Chief  
Licensing Branch No. 1  
Division of Licensing

cc: See next page

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