

DUKE POWER COMPANY

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April 30, 1985

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Ms. E. G. Adensam, Chief
Licensing Branch No. 4

Re: Catawba Nuclear Station, Unit 2
Docket No. 50-414

Dear Mr. Denton:

By letter dated April 5, 1984, Duke Power Company submitted a report entitled "Catawba Nuclear Station Extended Operation Tests and Inspections of Diesel Generators". This report, along with subsequent submittals, described the extensive test and inspection program that was carried out on the Catawba 1A and 1B diesels.

As a result of the completion of this program for the Catawba Unit 1 diesels, a test and inspection plan for the Catawba Unit 2 diesels has been developed. The preoperational testing on the 2A and 2B diesels will be conducted in accordance with FSAR Section 8.3.1.1.3.10. This section will be updated to reflect the current Technical Specification references as noted in the attached marked-up FSAR page.

The quality revalidation inspection plan for both the Unit 2 engines is similar to that used for the inspection of the Catawba 1B diesel engine. The quality revalidation recommendations included in the TDI Diesel Generator Owners Group Design Review/Quality Revalidation Final Report have also been included in the Unit 2 inspection plan. As with the Unit 1 diesels, the inspection plan is submitted in tabular form showing the various inspections for each part and the size of the sample to be inspected. This inspection plan matrix is included as an attachment to this letter. Teardown and inspection of the 2A diesel started March 25, 1985, and is scheduled to be finished by July 1, 1985. The 2B diesel inspection will start after the 2A diesel has been returned to service.

The majority of design review modifications recommended by the TDI Diesel Generator Owners Group Design Review/Quality Revalidation Final Report will be implemented on Unit 2. These modifications also will be done on Unit 1. Several other modifications are under engineering review

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for both units. Action on these will not be implemented until review is completed. The review will be completed well in advance of the first refueling outage for both units so that sufficient time is allowed for appropriate action.

Very truly yours,

H. B. Tucker

Hal B. Tucker

ROS:slb

cc: Dr. J. Nelson Grace, Regional Administrator
U. S. Nuclear Regulatory Commission
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NRC Resident Inspector
Catawba Nuclear Station

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CNS

The diesel, generator, governor, exciter, regulator, control panels, and auxiliaries were used to "type qualify" the Catawba diesels for the following tests:

No Load Endurance Test (7-Day)
300 Start Test

The Catawba diesels, generators, governors, exciters, regulators, control panels and auxiliaries were used for the following:

Factory Testing
Seismic Testing/Analysis

8.3.1.1.3.10 Preoperational and Periodic Testing

In addition to the factory tests described in Section 8.3.1.1.3.9, the following preoperational on-site acceptance tests and periodic tests will be conducted on each diesel generator and their associated auxiliary systems.

A. Preoperational Testing:

Tests as described in:

1. IEEE 387-1977, Sections 6.4 and 6.5.
2. Catawba Technical Specifications, Sections 4.8.1.1.2.a.3 *thru 6*
~~4.8.1.1.2.a.4~~ and 4.8.1.1.2.g.2 *thru 12*.
3. Regulatory Guide 1.9, Rev. 0, Section C.3 and C.4.
4. Regulatory Guide 1.41, Rev. 0, Section C.

CATAWBA UNIT 2 INSPECTION MATRIX

Sample Size (percent)

Part Name	Part No.	Class	Visual	Dimen.	S.NDE	V.NDE	Eng. Eval.	Notes
Lube Oil Pressure Regulating Valve	00-420	A	-	-	-	-	X	9
Jacket Water Standpipe, Fittings, Gasket	00-700A	B	100	-	-	-	-	8
Jacket Water Standpipe Valves	00-700B	B	-	-	-	-	X	9
Jacket Water Standpipe Supports	00-700C	B	100	-	-	-	-	8
Jacket Water Standpipe Switches	00-700E	B	-	-	-	-	X	9
Jacket Water Standpipe Bolting Materials	00-700F	B	100	-	-	-	-	8
Main Bearing Base Assembly	02-305A	A	100	-	10	-	-	-
Main Bearing Studs and Nuts	02-305C	A	100	-	-	-	-	-
Main Bearing Caps	02-305D	A	100	-	-	-	-	-
Lube Oil Internal Headers	02-307A	A	100	-	-	-	-	-
Lube Oil Tubing and Fittings-Internal	02-307B	A	100	-	-	-	-	-
Lube Oil Line Supports-Internal	02-307D	B	100	-	-	-	-	-
Crankshaft	02-310A	A	100	-	38	-	-	3
Main Bearing Shells	02-310B	A	100	100	-	-	-	-
Crankshaft Thrust Bearing Ring	02-310C	A	-	100	-	-	-	-
Crankcase Assembly	02-311A	A	100	-	-	-	-	-
Cam Bearing Caps and Dowels	02-311B	B	-	-	-	-	X	9
Crankcase Mounting Hardware	02-311D	B	-	-	-	-	X	9
Piston Rings	02-314B	A	100	-	-	-	-	-
Cylinder Block	02-315A	A	-	25	25	-	-	4
Cylinder Liner	02-315C	A	100	100	-	-	-	-
Cylinder Block Jacket Water Manifold	02-315D	B	100	-	-	-	-	-
Cylinder Head Studs	02-315E	B	25	-	-	-	-	-
Cylinder Head Nuts	02-315F	B	100	-	-	-	-	-
Jacket Water Inlet Manifold Assembly	02-316A	B	100	-	-	-	-	8
Jacket Water Inlet Manifold Coupling	02-316B	B	100	-	-	-	-	8
Jacket Water Discharge Manifold	02-317A	B	100	-	-	-	-	-
Jacket Water Disch. Manifold Coupling	02-317B	B	100	-	-	-	-	8
Jacket Water Disch. Manifold Supports	02-317C	B	100	-	-	-	-	8
Flywheel Bolting	02-330B	A	100	-	-	-	-	-
Front Gear Case Bolting	02-335B	C	100	-	-	-	-	-
Connecting Rods and Bushings	02-340A	A	100	100	100	-	-	-
Connecting Rod Bearing Shells	02-340B	A	100	100	100	100	-	-
Pistons	02-341A	A	100	-	100	-	-	-

Part Name	Part No.	Class	Visual	Dimen.	S.NDE	V.NDE	Eng.Eval.	Notes
Piston Pin Assembly	02-341C	A	100	-	-	-	-	-
Intake Tappets	02-345A	A	100	-	-	-	-	-
Fuel Tappets	02-345B	A	100	-	-	-	-	-
Camshaft Assembly	02-350A	A	100	-	-	-	-	-
Camshaft Bearing	02-350B	B	100	-	-	-	-	5
Camshaft Supports, Bolting and Gear	02-350C	A	100	-	-	-	-	-
Camshaft Gear	02-355A	A	100	-	-	-	-	-
Idler Gear Assembly	02-355B	A	100	-	-	-	-	-
Air Start Valve	02-359	A	100	100	-	-	-	-
Cylinder Head	02-360A	B	100	100	100	100	-	2
Intake and Exhaust Valves	02-360B	B	100	100	-	-	-	-
Valve Springs	02-360D	B	100	-	-	-	-	1
Subcover Assembly	02-362A	B	100	-	100	-	-	-
Fuel Injection Pump	02-365A	B	100	-	-	-	-	-
Fuel Injection Tubing	02-365C	B	100	-	100	-	-	6
Fuel Injection Tubing Supports	02-365D	B	100	-	-	-	-	8
Fuel Pump Linkage and Control Shaft	02-371A	A	100	-	-	-	-	-
Fuel Pump Linkage, Bearings and Shaft	02-371B	A	100	-	-	-	-	-
Intake Manifolds	02-375	B	100	-	-	-	-	-
Exhaust Manifolds	02-380A	B	100	-	-	-	-	-
Exhaust Manifold Bolting	02-380B	B	100	9	-	-	-	-
Crankcase Covers Gaskets and Bolting	02-386B	C	100	-	-	-	-	-
Intake and Intermediate Rocker Arm Assem	02-390A	B	100	-	-	-	-	-
Exhaust Rocker Arm Assembly	02-390B	B	100	-	-	-	-	-
Intake and Exhaust Pushrods	02-390C	B	100	-	100	-	-	-
Connector Pushrods	02-390D	B	100	-	100	-	-	-
Rocker Arm Bushings	02-390E	B	100	-	-	-	-	-
Rocker Arm Bolting	02-390G	B	100	-	100	-	-	-
Overspeed Trip and Accessory Drive	02-410B	A	100	-	-	-	-	-
Overspeed Trip Couplings	02-410C	A	100	-	-	-	-	-
Speed Regulating Governor	02-411A	A	100	-	-	-	-	-
Governor Drive Couplings	02-411B	A	100	-	-	-	-	-
Governor Linkage	02-413A	A	100	-	-	-	-	-
Fuel Pump Linkage-Auto Shutdown Cylinder	02-413B	B	100	-	-	-	-	-
Governor Booster Servomotor	02-415B	B	100	-	-	-	-	-
Governor Heat Exchanger Assembly	02-415C	A	100	-	-	-	-	-
Intercooler Piping-Coupling,Bolt,Gskts	02-436B	A	100	-	-	-	-	-
Turbo Cooling Water Pipe and Fittings	02-437A	B	100	-	-	-	-	8
Turbo Cooling Water Supports	02-437B	A	100	-	-	-	-	8

Part Name	Part No.	Class	Visual	Dimen.	S.NDE	V.NDE	Eng.Eval.	Notes
Generator Shaft and Bearings	CN-119A	A	-	-	-	-	X	9
Jacket Water Heat Exchanger	CN-120	B	-	-	-	-	X	9
Oil Prelube Filter	CN-122	A	-	-	-	-	X	9
Lube Oil Keepwarn Strainer	CN-131	A	-	-	-	-	X	9
Thermostatic Valve	CN-136/40	B	100	-	-	-	-	-
Intercooler	F-068	A	100	-	100	-	-	-
Turbocharger	MP-022/3	A	100	100	100	-	-	10
Lube Oil Full Pressure Strainer	SE-025	A	-	-	-	-	X	9

Notes to Table

1. Intake and exhaust valve springs have proper color code.
2. Ultrasonic wall thickness measurement of fire deck and fuel nozzle area. Inspection to determine if the head has been repaired.
3. Crankshaft web deflections and thrust clearances to be measured with the diesel hot and cold. A torsigraph will be done on the crankshaft.
4. A sample will be removed from the block for material verification.
5. Camshaft bearings will be inspected only if the cam lobes show abnormal wear.
6. ECT inspections will be done of both ends of high pressure injection lines.
7. Turbocharger bracket bolting will be replaced if necessary.
8. Walkdown inspection to verify as-built condition.
9. Engineering validation of part to determine if there are any significant unresolved maintenance or operational problems associated with the part.
10. Teardown and inspection of new or rebuilt turbochargers which have accumulated less than 50 hours of operation will not be performed.

Part Name	Part No.	Class	Visual	Dimen.	S.NDE	V.NDE	Eng. Eval.	Notes
Start Air Manifold Pipe, Tubing & Fittings	02-441A	A	100	-	-	-	-	8
Start Air Manifold Pipe Supports	02-441C	A	100	-	-	-	-	8
Start Air Distributor Tbg, Fittings, Gaskets	02-442B	A	100	-	-	-	-	8
Fuel Oil Piping and Tubing	02-450B	A	100	-	-	-	-	8
Fuel Oil Piping Supports	02-450D	A	100	-	-	-	-	8
Fuel Oil Filter Mounting Hardware	02-455C	A	100	-	-	-	-	-
External Lube Oil Lines	02-465A	A	100	-	-	-	-	8
External Lube Oil Line Supports	02-465B	A	100	-	-	-	-	-
External Lube Oil Valves	02-465C	A	-	-	-	-	X	9
Turbocharger Lube Oil Piping	02-467A	B	100	-	-	-	-	-
Turbocharger Lube Oil Piping Supports	02-467B	B	100	-	-	-	-	-
Turbocharger Bracket	02-475A	B	100	-	-	-	-	-
Turbocharger Bracket Bolting	02-475D	B	8	-	-	-	-	7
Control Panel Cabinet	02-500A	A	-	-	-	-	X	9
Control Air Accumulator	02-500F	A	-	-	-	-	X	9
Control Air System Valves	02-500G	A	-	-	-	-	X	9
Control Air System Pressure Switches	02-500H	B	-	-	-	-	X	9
Control System Relays	02-500J	A	-	-	-	-	X	9
Control System Solenoid Valves	02-500K	A	-	-	-	-	X	9
Control Air System Piping, Tubing, Fitting	02-500M	B	100	-	-	-	-	8
Control Panel Wiring	02-500N	A	-	-	-	-	X	9
Lube Oil Sump Tank	02-540A	B	100	-	-	-	-	-
Lube Oil Sump Tank Bolting	02-540B	B	100	-	-	-	-	-
Lube Oil Sump Tank Mounting Hardware	02-540C	B	100	-	-	-	-	-
Instrumentation Thermocouples	02-630D	B	-	-	-	-	X	9
Engine & Auxiliary Module Wiring Conduit	02-688A	A	100	-	-	-	-	-
Engine & Auxiliary Module Wiring	02-688B	A	-	-	-	-	X	9
Engine & Auxiliary Module Wiring Boxes	02-688C	A	-	-	-	-	X	9
Engine Alarm Sensors	02-690	A	-	-	-	-	X	9
Orf Engine Safety Alarm Sensors-Switches	02-691A	B	-	-	-	-	X	9
Engine Shutdown Tubing and Fittings	02-695A	B	100	-	-	-	-	8
Engine Shutdown Valves, Regs, & Orifice	02-695B	A	-	-	-	-	X	9
Engine Shutdown Trip Switches	02-695C	A	-	-	-	-	X	9
Fuel Oil Duplex Strainer	02-825D	A	-	-	-	-	X	9
Turbocharger Thrust Bearing Lube System	02-CFR	C	100	-	-	-	-	-
Intake Air Filter	CN-106	B	-	-	-	-	X	9
Intake Air Silencer	CN-107	B	-	-	-	-	X	9
Before and After Lube Oil Pump	CN-109	A	-	-	-	-	X	9
Full Flow Lube Oil Filter	CN-110	A	-	-	-	-	X	9
Lube Oil Heat Exchanger	CN-111	B	-	-	-	-	X	9