

Duke Power Company
McGuire Nuclear Generation Department
12700 Hagers Ferry Road (MG01VP)
Huntersville, NC 28078-9340

H. B. BARRON
Vice President
(704) 875-4800
(704) 875-4809 Fax



DUKE POWER

March 30, 1997

U.S. Nuclear Regulatory Commission
Attention: Document Desk
Washington, DC 20555

Subject: McGuire Nuclear Station, Units 1 and 2
Docket Nos. 50-369 and 50-370
Inservice Testing Program
Relief Request 1.4.2

Dear Sir:

On January 16, 1997, a teleconference was held to discuss Fuel Oil (FD) pump testing. As a result of that discussion, Relief Request 1.4.2 was revised to state that previously described alternate testing required by Section 3.4 of NUREG-1482 will be accomplished via the Inservice Testing (IST) Supplemental Test Program. In addition, the pumps will remain in the IST Program pump tables. A notation will be added to the tables stating that the pumps will be tested in accordance with the Supplemental Test Program.

The revised pages for Units 1 and 2 Pump Inservice Testing, the specific relief request for each unit, and the revised Supplemental Test Program are attached for approval by the Staff.

Questions regarding this information, should be directed to J.M. Washam at (704) 875-4181.

Very truly yours,

H.B. Barron

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xc. Mr. L.A. Reyes
Regional Administrator, Region II
U.S. Nuclear Regulatory Commission
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323

Mr. Victor Nerses, Project Manager
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
One White Flint North, Mail Stop 9H3
Washington, DC 20555

Mr. Scott M. Shaeffer
Senior NRC Resident Inspector, McGuire
McGuire Nuclear Station

UNIT 1 - MCGUIRE NUCLEAR STATION
Pump Inservice Testing General Data

Pump ID. Number	Description	Code Class	Flow Diagram	Applicable Relief Requests	Test Frequency	Remarks
1CAPU0001	Motor Driven Auxiliary Feedwater Pump 1A	3	MC-1592-1.1	RR-1.3.1, RR-1.4.1	Quarterly	NONE
1CAPU0002	Motor Driven Auxiliary Feedwater Pump 1B	3	MC-1592-1.1	RR-1.3.1, RR-1.4.1	Quarterly	NONE
1CAPU0003	Turbine Driven Auxiliary Feedwater Pump #1	3	MC-1592-1.1	RR-1.3.1, RR-1.4.1	Quarterly	NONE
1FDPU0054	Diesel Generator Fuel Oil Transfer Pump 1A	3	MC-1609-3.0	RR-1.3.1, RR-1.4.2	6 Month	Supplemental Test Program
1FDPU0055	Diesel Generator Fuel Oil Transfer Pump 1B	3	MC-1609-3.1	RR-1.3.1, RR-1.4.2	6 Month	Supplemental Test Program
1KCPU0001	Component Cooling Water Pump 1A1	3	MC-1573-1.0	RR-1.3.1, RR-1.4.3	Quarterly	NONE
1KCPU0002	Component Cooling Water Pump 1A2	3	MC-1573-1.0	RR-1.3.1, RR-1.4.3	Quarterly	NONE
1KCPU0003	Component Cooling Water Pump 1B1	3	MC-1573-1.0	RR-1.3.1, RR-1.4.3	Quarterly	NONE

UNIT 1 - McGUIRE NUCLEAR STATION

Pump Inservice Testing Specific Data

Pump ID. Number	Speed	Inlet Pressure	Discharge Pressure	Differential Pressure	Reference Vibration	Flow Rate	Pump Type	Revision
1CAPU0001	Not Required	RR-I.4.1	Meets Code Requirements	Meets Code Requirements	RR-I.3.1	Meets Code Requirements	Centrifugal	
1CAPU0002	Not Required	RR-I.4.1	Meets Code Requirements	Meets Code Requirements	RR-I.3.1	Meets Code Requirements	Centrifugal	
1CAPU0003	Meets Code Requirements	RR-I.4.1	Meets Code Requirements	Meets Code Requirements	RR-I.3.1	Meets Code Requirements	Centrifugal	
1FDPU0054	Not Required	RR-I.4.2	RR-I.4.2	RR-I.4.2	RR-I.3.1	RR-I.4.2	Gear Positive Displacement	24
1FDPU0055	Not Required	RR-I.4.2	RR-I.4.2	RR-I.4.2	RR-I.3.1	RR-I.4.2	Gear Positive Displacement	24
1KCPU0001	Not Required	RR-I.4.3	Meets Code Requirements	Meets Code Requirements	RR-I.3.1	Meets Code Requirements	Centrifugal	
1KCPU0002	Not Required	RR-I.4.3	Meets Code Requirements	Meets Code Requirements	RR-I.3.1	Meets Code Requirements	Centrifugal	
1KCPU0003	Not Required	RR-I.4.3	Meets Code Requirements	Meets Code Requirements	RR-I.3.1	Meets Code Requirements	Centrifugal	

UNIT 2 - McGUIRE NUCLEAR STATION
Pump Inservice Testing General Data

Pump ID. Number	Description	Code Class	Flow Diagram	Applicable Relief Requests	Test Frequency	Remarks
2CAPU0001	Motor Driven Auxiliary Feedwater Pump 2A	3	MC-2592-1.1	RR-I.3.1, RR-I.4.1	Quarterly	NONE
2CAPU0002	Motor Driven Auxiliary Feedwater Pump 2B	3	MC-2592-1.1	RR-I.3.1, RR-I.4.1	Quarterly	NONE
2CAPU0003	Turbine Driven Auxiliary Feedwater Pump #2	3	MC-2592-1.1	RR-I.3.1, RR-I.4.1	Quarterly	NONE
2FDPU0054	Diesel Generator Fuel Oil Transfer Pump 2A	3	MC-2609-3.0	RR-I.3.1, RR-I.4.2	6 Month	Supplemental Test Program
2FDPU0055	Diesel Generator Fuel Oil Transfer Pump 2B	3	MC-2609-3.1	RR-I.3.1, RR-I.4.2	6 Month	Supplemental Test Program
2KCPU0001	Component Cooling Water Pump 2A1	3	MC-2573-1.0	RR-I.3.1, RR-I.4.3	Quarterly	NONE
2KCPU0002	Component Cooling Water Pump 2A2	3	MC-2573-1.0	RR-I.3.1, RR-I.4.3	Quarterly	NONE
2KCPU0003	Component Cooling Water Pump 2B1	3	MC-2573-1.0	RR-I.3.1, RR-I.4.3	Quarterly	NONE

UNIT 2 - MCGUIRE NUCLEAR STATION

Pump Inservice Testing Specific Data

Pump ID. Number	Speed	Inlet Pressure	Discharge Pressure	Differential Pressure	Reference Vibration	Flow Rate	Pump Type	Revision
2CAPU0001	Not Required	RR-I.4.1	Meets Code Requirements	Meets Code Requirements	RR-I.3.1	Meets Code Requirements	Centrifugal	
2CAPU0002	Not Required	RR-I.4.1	Meets Code Requirements	Meets Code Requirements	RR-I.3.1	Meets Code Requirements	Centrifugal	
2CAPU0003	Meets Code Requirements	RR-I.4.1	Meets Code Requirements	Meets Code Requirements	RR-I.3.1	Meets Code Requirements	Centrifugal	
2FDPU0054	Not Required	RR-I.4.2	RR-I.4.2	RR-I.4.2	RR-I.3.1	RR-I.4.2	Gear Positive Displacement	19
2FDPU0055	Not Required	RR-I.4.2	RR-I.4.2	RR-I.4.2	RR-I.3.1	RR-I.4.2	Gear Positive Displacement	19
2KCPU0001	Not Required	RR-I.4.3	Meets Code Requirements	Meets Code Requirements	RR-I.3.1	Meets Code Requirements	Centrifugal	
2KCPU0002	Not Required	RR-I.4.3	Meets Code Requirements	Meets Code Requirements	RR-I.3.1	Meets Code Requirements	Centrifugal	
2KCPU0003	Not Required	RR-I.4.3	Meets Code Requirements	Meets Code Requirements	RR-I.3.1	Meets Code Requirements	Centrifugal	

Specific Relief Request

RELIEF REQUEST:

I.4.2

PUMPS:

1FDPU0054, 1A D/G Fuel Oil Transfer Pump
1FDPU0055, 1B D/G Fuel Oil Transfer Pump

TEST REQUIREMENT:

- 1) Measure flowrate in accordance with OMa-1988 Part 6, 4.6.5.
- 2) Compare pressure reading with corresponding reference values as required in OMa-1988 Part 6, 5.2 (d).

BASIS FOR RELIEF:

- 1) This pump transfers Diesel generator fuel oil from the Diesel Fuel Oil Storage Tank to the Fuel Oil Day Tank. There does not exist in the piping system associated with this pump, a flow measuring device which could be used for flow measurements.
- 2) These diesel fuel oil transfer pumps are positive displacement type pumps. The capacity of positive displacement pumps is independent of the discharge pressure in the design operating range when the pumps are in good operating condition. Pump degradation may result in the loss of capacity at higher pressures, however, these pumps supply fuel oil to a non-pressurized tank and the pressure developed at the discharge of the pump is due only to system resistance. Since the differential pressure across the pump is independent of pump performance, the measurement of pump differential pressure is not meaningful. (1)

When these pumps have been tested in the past, the Diesel generator has been in operation and allowed to reduce the level in the day tank. This lower level allows the Fuel Oil Transfer pump to be operated for typically 1 minute, 15 seconds. After this time, the pump is stopped to prevent overfilling the day tank. Downstream of this pump is a backpressure control valve which is set at a minimum of 10 psig. This pressure ensures the valve will close to prevent gravity feed from the main storage tank to the day tank. Should this valve be set too high, the pump's relief valve will allow oil to re-circulate around the pump, however the flow requirements for the day tank will not be met. Therefore, the pump's discharge pressure can indicate a wide range of values with the pump still in proper operating condition, however, flowrate could be affected by too high discharge pressure. For these reasons, this pump's flowrate will be trended, but not the discharge pressure.

Specific Relief Request

ALTERNATE TESTING:

The following Alternate Testing will be performed under the Supplemental Test Program (Appendix B Program). The FD Pumps will be tested pursuant to NUREG-1482, Section 3.4.

1) Flowrate from the pump will be calculated by measuring the level rise in the day tank over time and converting the results to a flow in gallons per minute. Since the stopwatch and level measurement device used for this test will meet the calibration requirements of the code, the overall accuracy requirements of $\pm 2\%$ will be met. At a 6 month frequency, FD pump performance will be monitored to ensure that flow does not decrease to less than 200% of flow required (approximately 12.5 gpm). This test will be done during diesel operation.

2) Pump discharge pressure will be monitored during the pump run, and recorded in the record of test. The reading obtained will be verified to be greater than 10 psig to meet the requirements described above, however, discharge pressure will not be compared to an acceptance criteria developed from OMa-1988 Part 6, Table 3b. Flowrate measurements and vibrations will be recorded.

- (1) Safety Evaluation Report Dated January 16, 1991 for McGuire Units 1 and 2
- (2) Memorandum to M. T. Cash dated February 24, 1997 regarding 1/16/97 teleconference.

Specific Relief Request

RELIEF REQUEST: I.4.2

PUMPS: 2FDPU0054, 2A D/G Fuel Oil Transfer Pump
2FDPU0055, 2B D/G Fuel Oil Transfer Pump

TEST REQUIREMENT: 1) Measure flowrate in accordance with OMa-1988 Part 6, 4.6.5.
2) Compare pressure reading with corresponding reference values as required in OMa-1988 Part 6, 5.2 (d).

BASIS FOR RELIEF: 1) This pump transfers Diesel generator fuel oil from the Diesel Fuel Oil Storage Tank to the Fuel Oil Day Tank. There does not exist in the piping system associated with this pump, a flow measuring device which could be used for flow measurements.
2) These diesel fuel oil transfer pumps are positive displacement type pumps. The capacity of positive displacement pumps is independent of the discharge pressure in the design operating range when the pumps are in good operating condition. Pump degradation may result in the loss of capacity at higher pressures, however, these pumps supply fuel oil to a non-pressurized tank and the pressure developed at the discharge of the pump is due only to system resistance. Since the differential pressure across the pump is independent of pump performance, the measurement of pump differential pressure is not meaningful. (1)

When these pumps have been tested in the past, the Diesel generator has been in operation and allowed to reduce the level in the day tank. This lower level allows the Fuel Oil Transfer pump to be operated for typically 1 minute, 15 seconds. After this time, the pump is stopped to prevent overfilling the day tank. Downstream of this pump is a backpressure control valve which is set at a minimum of 10 psig. This pressure ensures the valve will close to prevent gravity feed from the main storage tank to the day tank. Should this valve be set too high, the pump's relief valve will allow oil to re-circulate around the pump, however the flow requirements for the day tank will not be met. Therefore, the pump's discharge pressure can indicate a wide range of values with the pump still in proper operating condition, however, flowrate could be affected by too high discharge pressure. For these reasons, this pump's flowrate will be trended, but not the discharge pressure.

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(1) Safety Evaluation Report Dated January 16, 1991 for McGuire Units 1 and 2.

(2) Memorandum to M. T. Cash dated February 24, 1997 regarding 1/16/97 teleconference.

Supplemental Test Program

The 10CFR50, Appendix B Program (Supplemental Test Program) includes components which have been determined to be important to safety and judged to be prudent to test, but which are not explicitly under the scope of ASME Codes and Standards. Changes to test methods, frequency and acceptance criteria, as well as additions to or deletions from the program do not require Justification of Deferrals, Relief Requests, or other forms of NRC notification. However, such changes should be approved by the IST program administrator, and documented in the IST Correspondence File.

The following items are currently being planned for addition to this program:

- 1) Full-flow vibrations will be recorded during each refueling outage for the ND and NI Pumps (Reference Pump Relief Requests 1.4.4 and 1.4.5, Memorandum to IST Correspondence File dated September 18, 1995).
- 2) Leak-rate testing of the Hydrogen Analyzer/Post Accident Gas Sample loops will be performed during each refueling outage (Reference PIP 1-M95-1622).
- 3) During refueling outages 1(2)EOC10, gross leakage will be monitored past the ND to Auxiliary Spray boundary valves (Reference PIP 0-M95-643).
- 4) A gross diversion leak test of 1(2)NV-164 (hydrogen inlet to the VCT) will be performed (frequency to be determined).
- 5) The Fuel Oil Transfer (FD) pumps will be tested on a 6 month frequency per the Alternate Testing described in Pump Specific Relief Request 1.4.2 (both Units).

Rev. 24 (Unit 1)

Rev. 19 (Unit 2)

02/24/97

Section III

1 of 1