ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 9208180188 DOC. DATE: 92/08/05 NOTARIZED: NO DOCKET #
FACIL: 50-269 Oconee Nuclear Station, Unit 1, Duke Power Co. 05000269
50-270 Oconee Nuclear Station, Unit 2, Duke Power Co. 05000270
50-287 Oconee Nuclear Station, Unit 3, Duke Power Co. 05000287

AUTH. NAME AUTHOR AFFILIATION
HAMPTON, J. W. Duke Power Co.
RECIP. NAME RECIPIENT AFFILIATION
Document Control Branch (Document Control Desk)

SUBJECT: Forwards Rev 1 to third 10-yr interval inservice testing program Relief Request 10 re testing of core flood tank A & B outlet check valves. Leak testing will be performed on cold shutdown frequency.

DISTRIBUTION CODE: A047D COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 5
TITLE: OR Submittal: Inservice Inspection/Testing/Relief from ASME Code

NOTES:

	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL
	PD2-3 LA	1	0	PD2-3 PD	1	1
	WIENS, L	2	2			
INTERNAL:	ACRS	6	6	NRR/DET/ECMB 9H	1	1
	NRR/DET/EMEB 7E	1	1	NUDOCS-ABSTRACT	1	1
	OC/LFMB	1	0	OGC/HDS2	1	0
	REG FILE 01	1	1	RES MILLMAN, G	1	1
	RES/DSIR/EIB	1	1			
EXTERNAL:	EG&G BROWN, B	1	1	EG&G RANSOME, C	1	1
	NRC PDR	1	1	NSIC	1	1

R I D S / A D D S

R I D S / A D D S

NOTE TO ALL "RIDS" RECIPIENTS:

PLEASE HELP US TO REDUCE WASTE! CONTACT THE DOCUMENT CONTROL DESK, ROOM P1-37 (EXT. 20079) TO ELIMINATE YOUR NAME FROM DISTRIBUTION LISTS FOR DOCUMENTS YOU DON'T NEED!

TOTAL NUMBER OF COPIES REQUIRED: LTTR 22 ENCL 19

MAf

Duke Power Company
Oconee Nuclear Station
P.O. Box 1439
Seneca, S.C. 29679

(803) 882-5363

DUKE POWER

August 5, 1992

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

Subject: Duke Power Company
Oconee Nuclear Station
Docket No. 50-269, 270, 287
Third 10-Year Inspection Interval
Inservice Testing Program

On May 27, 1992 Duke Power submitted revision 19 to the Oconee Nuclear Station Inservice Testing Program Manual. Contained within that manual was a relief request to modify the testing of valves 1, 2, 3CF-11 & 13. During the planning for these test for the UNIT 3 EOC 13 refueling outage, currently in progress, it was identified performing this test on 3CF-11 would result in undue hardship due to the maintenance scheduled on this valve during this outage to repair a seat leak and hinge pin leak. It was also recognized this will occur each time one of these valves are required to be disassembled in the future. A maintenance history review was performed on these six valves. This review showed 3CF-11 had four other repair work request generated. The earliest was in 1982. Two work request were for hinge pin leaks and two were for seat leaks. The review indicated 3CF-13 had two repair work request with the earliest being 1981 and the latest in 1982. One was for a hinge pin leak and the other was a seat leak. It should be noted to repair a hinge pin leak does not normally require valve disassembly and thereby the normal test methods would be used. The review indicated no repair work request were generated for these valves on Units 1 and 2.

The revision to the existing request # 10 addresses not only the normal testing method, but also the testing method for those cases following valve disassembly where the normal method will result in an undue hardship without a compensating increase in level of quality and safety. The attached revision to request # 10 should be inserted in the Oconee's Third Inservice Testing Interval Program Manual, submitted on May 27, 1992, to replace the current request # 10 contained in that package.

Very truly yours,

J. W. Hampton /DW

J. W. Hampton

Attachment

A047 /1

xc: Mr. L. A. Wiens
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Mr. S. D. Ebneter
Regional Administrator, Region II
U. S. Nuclear Regulatory Commission

Mr. P. E. Harmon
Senior NRC Resident Inspector
Oconee Nuclear Station

Mr. Heyward G. Shealy
Bureau of Radiological Health
SC Dept. of Health & Environmental Control
2600 Bull St.
Columbia, SC 29201

OCONEE NUCLEAR STATION

Third Ten Year Interval

Request # 10, Revision 1

I. Component for which relief is requested:

(a) Name(s) and Number(s): Core Flood Tank "A" and "B" Outlet Check

1CF-11, 13
2CF-11, 13
3CF-11, 13

Drawing Number/Coordinates: OFD-102A-1.3/E-10, E-6
OFD-102A-2.3/D-10, D-6
OFD-102A-3.3/E-10, E-6

(b) Function: These valves normally prevent backflow from the Reactor Coolant System to the core flood tanks. In an emergency they open to permit flow from the core flood tanks to the Reactor Coolant System.

(c) ISI Class/Duke Class: A/A

(d) IWV-2000 Valve Category: A/C

II. Reference Code requirement which has been determined to be impractical:

IWV-3520 Full-Stroke Tests for Check Valves.

III. Basis for requesting relief: These valves cannot be subjected to greater than RCS pressure during power operation. They cannot be full-stroke exercised during cold shutdown due to the possibility of over pressurization and hydraulic shock to the system.

IV. Alternate examination: These valves will be tested to open each refueling outage. Testing will be performed at a lower than accident pressure condition and the data analyzed to verify that the valves will pass the required flow under accident conditions. The test will consist of pressurization of the tanks such that flow can be established from the tanks to the refueling canal. Block valves are then opened to dump the contents of the tank into the canal. Tank level is monitored versus time and a flow rate is calculated based upon the portion of data most nearly representing steady-state conditions. That flow rate is then used to determine pressure losses in the system due to piping and block valves. Since the total pressure differential in the flow stream is known or can be calculated, the remainder is attributed to the check valves, and a corresponding flow coefficient can be calculated. The calculated flow coefficient is compared to the coefficient required by our safety analysis, and if larger, the test is considered acceptable. (Reference Duke Power Design Engineering Documents OSC-4500 (Unit 1), OSC-4660 (Unit 2), Unit 3 to be determined during Unit 3 EOC 13 Refueling Outage.)

Partial stroke testing will be performed at cold shutdown.

Leak testing will be performed on a cold shutdown frequency consistent with ONS Technical Specification requirements for CF-12 and CF-14.

V. Exception:

Following maintenance requiring disassembly, 1CF11, 2CF11, 3CF11, 1CF13, 2CF13, and 3CF13 will not be full flow tested.

VI. Basis for Exception:

Full flow testing of these valves is performed concurrently with draining of the Core Flood Tanks after defueling and prior to valve removal for maintenance. Post-maintenance retesting of these valves would create undue hardship and adversely affect shutdown risk without a compensating increase in the level of quality and safety. The following provides an explanation of this conclusion.

A post maintenance retest would require refilling of the tank. This is not feasible, since there is no available space to mix water when in the defueled maintenance window. Also, there is no piping available to provide a flow path for the refilling process. The time required to re-establish a flow path and refill the tanks would be approximately 30 hours of critical path outage time. The pump which refills the tank has a maximum capacity of about 30 gpm (though normal operating capacity is about half of that), and the tank volume is about 7500 gallons. There is extensive mixing, sampling, recirculation, and valve alignment required as well. (Though not included in the above time estimate, extensive revision of procedures and block tagouts are also involved in making the above changes.) Performing this test after valve maintenance will reduce the length of time between testing and refueling. Since the water clarity in the vessel will be reduced by the test, it is desirable to have more time for purification of the water prior to refueling, so as to avoid limiting the ability to properly verify fuel assembly locations.

Reversing the test/maintenance sequence described above in order to avoid two tank dumps is physically possible. It would not, however, reduce either the hardship or the shutdown risk associated with the existing plan. Outage delays would still result, since there is typically valve maintenance work associated with the tank which can only be performed after the tank is drained. This work would inevitably be delayed while valve maintenance (on CF11 and 13) was being performed and the fuel transfer canal is refilled prior to the full flow test. In addition, this delay in flow testing leaves less time within the defueled maintenance window to make repairs in the event of a test failure. Furthermore, any post-test maintenance requiring disassembly would require draining of the canal for repairs and refilling of the canal and tank for retest, adding critical path time to the outage. Also, the time span between the test and refueling process would again be reduced, leading to water clarity concerns.

Alternate scheduling is not a desirable option. The full flow test must be performed when the reactor is defueled. The discharge of the Core Flood Tank contents into a fueled vessel, with the vessel head removed, may be potentially damaging to the core structure or fuel assemblies, and is therefore a safety risk. There are no alternate flow paths which would eliminate this risk. Since CF11 and 13 cannot be isolated from CF12 and 14, there is no alternate flow path available that does not pass through the reactor vessel. Therefore, if testing were attempted after defueled maintenance, while the RCS is intact, the flow path would still have to pass through the core, risking damage. Also, the pressurizer would be the only available reservoir sufficient to hold the water, and there would be no way to isolate the steam generators. The multiple flow paths involved with this approach would unnecessarily complicate the analysis required to establish valve performance.
In order to isolate these valves from the LPI system, which must be in operation whenever fuel is in the core, one train of LPI would have to be removed from service, thus adversely affecting the unit's shutdown risk. Therefore, removal of the valves from the system prior to defueled maintenance is highly undesirable.

VII. Alternate Test:

While not the preferred method, disassembly is recognized by Generic Letter 89-04 as an acceptable alternative to full flow testing. In some respects, disassembly can be the most effective method of advance detection of deterioration. For example, it can detect wear, corrosion, or other mechanical damage that flow testing may not detect. Therefore, we will use disassembly, when required for maintenance, in lieu of full flow testing to satisfy the requirements of IWV-3520. A partial stroke test will be performed during unit startup.