



Entergy Nuclear Generation Co.
Pilgrim Station
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May 7, 2002

William J. Riggs
Director, Nuclear Assessment

U.S. Nuclear Operations, Inc.
Attention: Document Control Desk
Washington, D.C. 20555-0001

SUBJECT: Entergy Nuclear Operations, Inc.
Pilgrim Nuclear Power Station
Docket No. 50-293

Request to Amend Relief Request RV-44 to Include 6 additional Excess Flow Check Valves.

REFERENCES:

1. Relief request from Entergy Nuclear Generation Company (ENGEC) to NRC dated February 2, 2001.
2. Supplement to ENGEC relief request dated March 22, 2001.
3. NRC letter dated May 2, 2001, authorizing relief request RV-44 for excess flow check valves.

LETTER NUMBER: 2.02.010

Dear Sir or Madam:

This letter requests authorization to include 6 additional Chemequip excess flow check valves into relief request RV-44 which was authorized by NRC letter dated May 2, 2001.

Background

By letter dated May 2, 2001, the NRC found Pilgrim's relief request an acceptable alternative to the pump and valve inservice testing requirements of Section XI of the Code. The May 2, 2001, relief was authorized for the remainder of the term of the current operating license pursuant to 1CFR50.55a(a)(3)(i).

This relief was authorized in response to an Entergy Nuclear Generation Company (ENGEC) letter dated February 2, 2001, as supplemented by ENGEC letter dated March 22, 2001. The supplemental letter, in part, withdrew 6 Chemequip excess flow check valves (EFCVs) from Relief Request RV-44 when it was identified that upstream flow restricting orifices were not present in the lines served by the subject valves and, as a result, the basis for the relief request was not met.

The valves withdrawn were:

Reactor Water Cleanup System:	12-CK-360 12-CK-361
Reactor Core Isolation Cooling System:	1301-15A 1301-15B
High Pressure Coolant Injection System:	2301-26 2301-220

During refueling outage 13 (RFO 13) Pilgrim installed orifices in the instrument lines served by these EFCVs, making the above EFCVs eligible for testing in accordance with relief authorized by the May 2, 2001, NRC letter.

Request

This letter requests NRC authorization to test the above listed Chemequip valves in accordance with relief provided by the May 2, 2001, authorization letter.

Basis for Relief

The basis for extending the May 2, 2002, relief authorization to include an additional 6 Chemequip EFCVs is that the subject valves are identical in design and function and are configured similarly to the Chemequip valves for which relief has already been authorized. These 6 EFCVs were not included in the May 2, 2002, relief because their associated lines were not equipped with flow restricting orifices to limit reactor water leakage in the event of rupture.

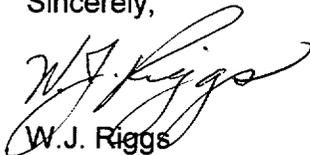
Flow restricting orifices were installed in the subject lines during RFO 13 and, as a result, the basis for the previous relief applies to these valves. This basis includes the fact that previous evaluations contained in Pilgrim's Updated Final Safety Analysis Report (UFSAR) of such an instrument line rupture do not credit the EFCVs for isolating the rupture. Thus a failure of an EFCV, though not expected as a result of this request, is bounded by the analysis

Conclusion

Following installation of the flow restricting orifices the additional 6 Chemequip EFCVs are identical in design and function to those valves for which relief has already been authorized. Based on the NEDO-32977-A and the analysis contained in Pilgrim's UFSAR, the proposed alternative to the required exercise testing frequency for EFCVs prescribed by OM-10 provides a satisfactory level of quality and safety.

Should you require further information on this issue, please contact Mr. Bryan Ford at (508) 830-8403.

Sincerely,



W.J. Riggs

Attachment: Relief Request RV-44

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Senior Resident Inspector

RELIEF REQUEST RV-44
Supplement to Pilgrim Refuel Outage Justification RJO-16

INSERVICE TESTING PROGRAM FOR PUMPS AND VALVES

SYSTEMS

Core Spray System (1400)
High Pressure Coolant Injection System (2301)
Reactor Core Isolation Cooling System (1301)
Reactor Water Cleanup System (1201)
Recirculation Pump Instrumentation (262)
Nuclear Boiler Instrumentation (261)
Nuclear Boiler Instrumentation (263)

VALVES

Excess Flow Check Valves manufactured by Chemequip:

1-CK-17A/B/C/D	263-38	263-81
1-CK-18A/B/C/D	263-44	263-83
12-CK-360	263-45	263-90
12-CK-361	263-51	263-92
1301-15A/B	263-53	263-215A/B
2301-26	263-55	263-217A/B
2301-220	263-57	263-219A/B
261-19A/B	263-59	263-220A/B
261-20A/B	263-61	263-223A/B
261-21A/B	263-69	263-225
261-22A/B	263-71	263-227
261-67A/B/C/D/E/F/G/H	263-73	263-231A/B
261-110A/B	263-75	263-233
262-25A/B	263-77	263-237
262-26A/B	263-79	263-242A/B
		1400-31A/B

CATEGORY

AC

CLASS:

1, 2

FUNCTION

Excess Flow Check Valves (EFCV's) are installed within each instrument process line that is part of the reactor coolant pressure boundary and that penetrates primary containment. Each EFCV closes to limit flow within the respective instrument line in the event of an instrument line break downstream of the EFCV.

TEST REQUIREMENT

Pilgrim Nuclear Power Station (PNPS) will conduct testing of the plant EFCV's using the 1989 Edition of ASME Section XI. The 1989 Edition provides that the rules for IST for valves shall meet the requirements set forth in ASME Operations and Maintenance Standard OMA-1988, Part 10 (OM-10), "Inservice Testing of Valves in Light Water Reactor Power Plants." Use of portions of OM-10 is allowed pursuant to the provisions in 10 CFR 50.55a(f)(4)(iv) provided all the related requirements are met. The related OM-10 requirements for check valve exercising during a refueling outage are Sub-Paragraphs 4.3.2.2(e) and 4.3.2.2(h). The related OM-10 requirements for leak rate testing of valves are identified within Subsection 4.2.2. This provision to use OM-10 for testing EFCVs is pre-approved within the PNPS Inservice Testing Program Safety Evaluation Report, dated June 23, 1993.

OM-10, Subsection 4.3.2, requires these valves to be tested nominally every 3 months, except as specified by paragraph 4.3.2.2. The Pilgrim IST program takes exception to the testing requirements per sub-paragraph 4.3.2.2(e), which states that if exercising the valve is not practicable during plant operation or cold shutdowns, it may be limited to full-stroke exercising during refueling outages. The May 2, 2001, NRC letter authorized testing a representative sample every refueling outage. The Pilgrim refueling schedule is nominally once every two years.

OM-10, sub-paragraph 4.2.2.3(a); Test Frequency – Conduct leakage tests to "each" EFCV at least once every two years.

RELIEF REQUESTED

Relaxation of the number of EFCVs tested every refuel outage from "each" to a "representative sample" every refuel outage (nominally once every 24 months). The representative sample is based on approximately 20 percent of the valves each two year cycle such that each valve is tested at least every 10 years (nominal). This relief request revision adds 6 EFCVs to the number of Chemequip EFCVs to be sample tested each two year cycle in accordance with relief granted May 2, 2002.

BASIS FOR RELIEF

NEDO-32977-A, and the associated NRC Safety Evaluation, dated March 14, 2000, provides the basis for this relief. NEDO-32977-A justifies relaxing the EFCV testing frequency from the current testing of each valve once/cycle to a ~ 20% sample once/cycle such that each valve is tested within a 10 year interval.

NEDO-32977-A demonstrates, through operating experience, a high degree of reliability with EFCVs and the low consequences of an EFCV failure. Reliability data in the report (Tables 4-1 and 4-2) documents two EFCV failures (failure to close) at 4 participating plants (Monticello, Dresden, Vermont Yankee and Oyster Creek), for Chemequip valves similar to those used at Pilgrim. These two failures were observed over a service time of 5426 operating years ($4.75E +07$ operating hours). This results in a "Best Estimate Failure Rate" of $4.21 E-08$ per hour of operating time and an "Upper Limit Failure Rate" of $1.33 E-07$ per hour of operating time. A review of historical test surveillance data, and a test failure component history search at Pilgrim shows zero EFCV failures (failure to close) have been observed (data from 1983 through 1999 RFO #12). In addition, there are no known EFCV failures that occurred earlier than 1983.

The instrument lines at Pilgrim have a flow restricting orifice upstream of the EFCVs to limit reactor water leakage in the event of rupture. Previous evaluations contained in Pilgrim's Updated Final Safety Analysis Report (UFSAR) of such an instrument line rupture do not credit the EFCVs for isolating the rupture. Thus a failure of an EFCV, though not expected as a result of this request, is bounded by the analysis. Based on the NEDO-32977-A and the analysis contained in Pilgrim's UFSAR, the proposed alternative to the required exercise testing frequency for EFCVs prescribed by OM-10 provides a satisfactory level of quality and safety.

ALTERNATIVE TESTING

This relief request proposes to exercise test (FC), by full-stroke to the position required to fulfill its function, a representative sample of EFCVs every refueling outage. During the exercise test, gross valve seat leakage (LX_{EFC}) will be measured. The representative sample is based on approximately 20 percent of the valves each cycle such that each valve is tested every 10 years (nominal). An Administrative Open Normal Position Verification (AP) will be performed on each valve following exercise and leak testing.

EFCV failures will be documented in Pilgrim's Corrective Action Program as a surveillance test failure. The failure will be evaluated and corrected. The Administrative EFCV Sample Test Program procedure will trend EFCV test failures and determine if additional testing is warranted.

The Administrative EFCV Sample Test Program procedure will also establish a minimum acceptance criteria for Chemequip EFCVs of less than or equal to 1 failure per year (2 failures per 2 years) on a 2 year rolling average. This requirement will ensure EFCV performance remains consistent with the extended test interval. Upon exceeding the criteria an evaluation will be required which will:

- require a root-cause evaluation to determine cause,
- determine the extent of conditions,
- require an evaluation of the testing interval to ensure reliability of the EFCVs, and
- produce a risk analysis of the effects of the failures on cumulative and instantaneous plant safety.

Corrective actions and performance goals will be established based on the results of the root-cause analysis.

REFERENCES

NEDO-32977-A, "*Excess Flow Check Valve Testing Relaxation*," dated June 2000.

Safety Evaluation Report (with attached TER) by the office of Nuclear Reactor Regulation related to the Inservice Test Program and Requests for Relief, Pilgrim Nuclear Power Station Docket No. 50-293, dated June 23, 1993 (TAC No. M85069).

Safety Evaluation by the Office of Nuclear Reactor Regulation related to a relief request for excess flow check valve testing frequency at Pilgrim Nuclear Power Station Docket No. 50-293, dated May 2, 2001 (TAC No. MB1124).