REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 8701160164 DOC. DATE: 87/01/09 NOTARIZED: NO DOCKET #
FACIL: 50-397 WPPSS Nuclear Project, Unit 2, Washington Public Powe 05000397
AUTH. NAME AUTHOR AFFILIATION
SORENSEN, G. C. Washington Public Power Supply System
RECIP. NAME RECIPIENT AFFILIATION
ADENSAM, E. G. BWR Project Directorate 3

SUBJECT: Forwards addl info re proposed WNP-2 Type C testing program per telecon.

DISTRIBUTION CODE: A017D COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 5
TITLE: OR Submittal: Append J Containment Leak Rate Testing

NOTES:

	RECIPIENT ID CODE/NAME		COPIES LTTR	COPIES ENCL	RECIPIENT ID CODE/NAME		COPIES LTTR	COPIES ENCL
	BWR ADTS		1	1	BWR EB		1	1
	BWR EICSB		2	2	BWR FOB		1	1
	BWR PD3 LA		1	0	BWR PD3 PD	01	5	5
	BRADFUTE, J		1	1	BWR PSB		1	1
	BWR RSB		1	1				
INTERNAL:	ACRS	07	10	10	ADM/LFMB		1	0
	ELD/HDS2	08	1	1	NRR BWR ADTS		1	1
	NRR PWR-A ADTS		1	1	NRR PWR-B ADTS		1	1
	NRR/DSRO/EIB		1	1	NRR/DSRO/RSIB		1	1
	REG FILE	04	1	1				
EXTERNAL:	LPDR	03	1	1	NRC PDR	02	1	1
	NSIC	05	1	1				

TOTAL NUMBER OF COPIES REQUIRED: LTTR 35 ENCL 33

Washington Public Power Supply System
P.O. Box 968 3000 George Washington Way Richland, Washington 99352 (509) 372-5000

January 9, 1987
G02-87-004

Docket No. 50-397

Director of Nuclear Reactor Regulation
Attn: Ms. E. G. Adensam, Project Director
BWR Project Directorate No. 3
Division of BWR Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Ms. Adensam:

Subject: NUCLEAR PLANT NO. 2
OPERATING LICENSE NPF-21
REQUEST FOR EXEMPTION/TECHNICAL SPECIFICATION
CHANGE (APPENDIX J AND SECTION 4.6.1.2.d)

Reference:
1) Letter. G02-86-338, G.C. Sorensen (SS) to E.G. Adensam (NRC), same subject, dated 1/31/86

2) Letter, G02-86-677, G.C. Sorensen (SS) to E.G. Adensam (NRC), same subject, dated 7/22/86

The reference letters requested exemptions and Technical Specification changes related to Appendix J, Type B&C leak rate testing and provided information as to the criteria used to identify testing schedules. In subsequent telephone conversations with the Staff supplementary information on the proposed WNP-2 Type C testing program was requested. The attachment to this letter provides the requested information. It should be noted that the attached program description expands upon and completely replaces the information provided in Reference 2.

The requested exemptions and Technical Specification change are desired prior to commencing the next refueling outage, nominally scheduled for April 1987. As discussed in Reference 1 strict compliance with the present schedules misdirects resources, has the potential for imposing plant shutdown during a period of high energy demand combined with low hydroelectric capacity, and is not in keeping with as low as reasonably achieveable (ALARA) exposure programs.

A017
1/1

The potentially large expenditure of manpower, resources, and exposure represented by complete Type B and C testing requires a considerable amount of planning, scheduling and resource allocation. Any expedited processing of this request will be beneficial to the resource allocation and scheduling presently underway in support of the April refueling outage. Should you require any further assistance to aid in evaluating this request, please contact Mr. P.L. Powell, Manager, WNP-2 Licensing

Very truly yours,

G. C. Sorensen, Manager
Regulatory Programs

PLP/bk
Attachment

cc: JO Bradfute - NRC
C Eschels - EFSEC
JB Martin - NRC RV
E Revell - BPA
NS Reynolds - BLCP&R
NRC Site Inspector

WNP-2
APPENDIX J - TYPE C TESTING
PROGRAM DESCRIPTION

The scope of WNP-2's Appendix J Type C testing presently encompasses 357 valves acting as containment isolation boundaries contained in 77 penetrations. Depending on piping configurations, valves in a given penetration are tested individually, in-series with other isolation valves, or in parallel. From a group of tests on a given penetration, single failure criteria is applied for all possible leak paths, with the configuration yielding the largest leakage rate being used to arrive at a total leakage rate for that containment penetration. Appendix J and Plant Technical Specifications limit the sum total of all Type C and Type B (electrical penetrations, airlock, hatches) penetration leakages to 0.60 L_a which equates to 67,920 sccm.

As a function of valve size and valve type, the acceptable leakage rate for valves will vary. Using the values established by ASME (IWV-3426) defining permissable leakage limits for safety related valves, excessive leakage limits have been established for each Type C test performed. This limit is directly proportional to the valve size. A specific test configuration may concurrently test several isolation valves. In such instances, the excessive leakage limit assigned to the group of valves is equal to that which is permissable per IWV-3426 for one valve of a diameter equal to the largest valve in that group.

As substantiated by leak testing data from three previous outages, 70% of the isolation valves leak at rates far below the excessive leakage limit established per IWV-3426. These low leakage values have maintained over 50% of the containment penetrations in a low leakage category.

Plant Technical Specifications require that containment isolation valves be leak tested at intervals not to exceed 24 months. Based on the typical 12 month refueling cycle at WNP-2, roughly half of the containment isolation valves can be tested during each outage with no valve seeing more than two years of service without being tested. This approach reduces the man-rem exposure received from testing all valves during each outage.

Based on data obtained from previous testing in 1985 and 1986, several valves have leaked at a rate in excess of the limit set forth in IWV-3426. These valves have been repaired when possible (considering function, schedule, spare parts availability, ALARA) or have been left as-found when a substantial margin existed between the total leakage computed to date and the Appendix J/Technical Specification limit of $0.6L_a$. The degree of confidence in low leakage rates exhibited by over 70% of the isolation valves is not maintained by these valves which have exceeded their permissable leakage rates. Therefore, testing more frequently than at 24 month intervals for these valves is warranted until repeated acceptable leakage rates are obtained from consecutive tests.

The critical attributes of the WNP-2 program are as follows:

- All Type C containment isolation valves will be tested at a minimum of every 24 months.

- Valves not meeting acceptance criteria (excessive leakage limits) will be tested during the subsequent outage (typically within 12 months) until acceptable as-found leakage rates are obtained.

- A 'Total Leakage Rate to Date' tabulation will be maintained reflecting the following:

  1) Results of Type C tests performed to date during an outage, plus

  2) As-left leakage rates of all valves not requiring testing in a given outage due to acceptable leakage rates from previous outages, plus

  3) Results of Type B tests performed to date during an outage, plus

  4) As-left Type B leakage rates from previous outages for those not being tested during a given outage, plus

  5) As-left leakage rates from previous tests on containment purge supply and exhaust valves, plus

  6) As-left leakage rate from previous tests on the containment personnel airlock.

The summation of all six categories above shall not exceed the limit set forth in Appendix J and Technical Specifications of $0.6L_a$.

- The following valves/penetrations are on our augmented testing schedule as required by Technical Specifications and are not subject to consideration for a change in testing frequency:

  1) Main Steam Isolation Valves - minimum of once per 18 months. (For WNP-2, this testing presently occurs annually).

  2) Containment Purge Supply and Exhaust Valves - minimum of once per 6 months.

  3) Personnel Airlock - minimum once per 6 months.

- Reactor Feedwater check valves performing a containment isolation function at WNP-2 utilize a dual seat arrangement (resiliant seat and normal stellite seating surface on valve disc). Although the dual seat has improved the ability to obtain low leakage rates, the resiliant seats are subject to deterioration due to various system characteristics. Industry experience is mixed as are the

leak testing results at WNP-2 during the previous outages. The leak testing performed during the 1985 outage yielded high leakage rates and resulted in replacement of the soft seats. During the 1986 outage, all four check valves exhibited low leakage, with three of the four less than 10 sccm each. WNP-2 will continue to test these valves every refueling outage until a clear trend of low leakage rates is recognized. At that time, these valves will be evaluated as to their testing frequency, within the bounds of the Type C testing program established herein.

Based on the above positions and past testing results, the following testing program has been developed (independant of augmented testing requirements for MSIV's, Purge Valves, Feedwater Check Valves and Personnel Airlock):

1987 Outage - Test approximately 50% of Type C containment penetrations to include all penetrations containing valves which failed to meet the excessive leakage criteria in the as-found condition during 1986 outage testing.

1988 Outage - Test all remaining penetrations not tested during previous outage plus all penetrations containing valves which failed to meet the excessive leakage limit in the as-found condition during the 1987 outage.

1989 Outage - Test all penetrations not tested during previous outage plus all penetrations containing valves which failed to meet the excessive leakage limit in the as-found condition during the 1988 outage.