

August 26, 1986

Docket No. 50-397

Mr. G. C. Sorenson, Manager
Regulatory Programs
Washington Public Power Supply System
P. O. Box 968
3000 George Washington Way
Richland, Washington 99352

Dear Mr. Sorenson:

Subject: Request for Additional Information Related to Proposed Revision
of Technical Specification 4.6.4.1.

By letter dated May 30, 1985, the Supply System requested changes to the Technical Specifications addressing the Suppression Chamber - Drywell Vacuum Breakers (3/4.6.4). In response to a request by the staff, your letter of January 17, 1986, provided additional information concerning the proposed changes to that portion of your request addressed by Specification 4.6.4.1. Based on our review of the January 17 submittal, we conclude insufficient technical justification has been provided thus far to warrant approval of any of the proposed changes. The basis for this conclusion is provided in the Enclosure.

If, after reviewing the Enclosure, you conclude your previously proposed revisions to Specification 4.6.4.1 are technically justified, please provide a detailed justification addressing each of the technical issues evaluated by the staff in the enclosure. Please provide this information within 45 days of receipt of this letter. If, after your review you decide to withdraw this request, please let us know of your decision within this same time frame.

Sincerely,

/S/

Elinor G. Adensam, Director
BWR Project Directorate No. 3
Division of BWR Licensing

Enclosure:

1. Request for Additional Information

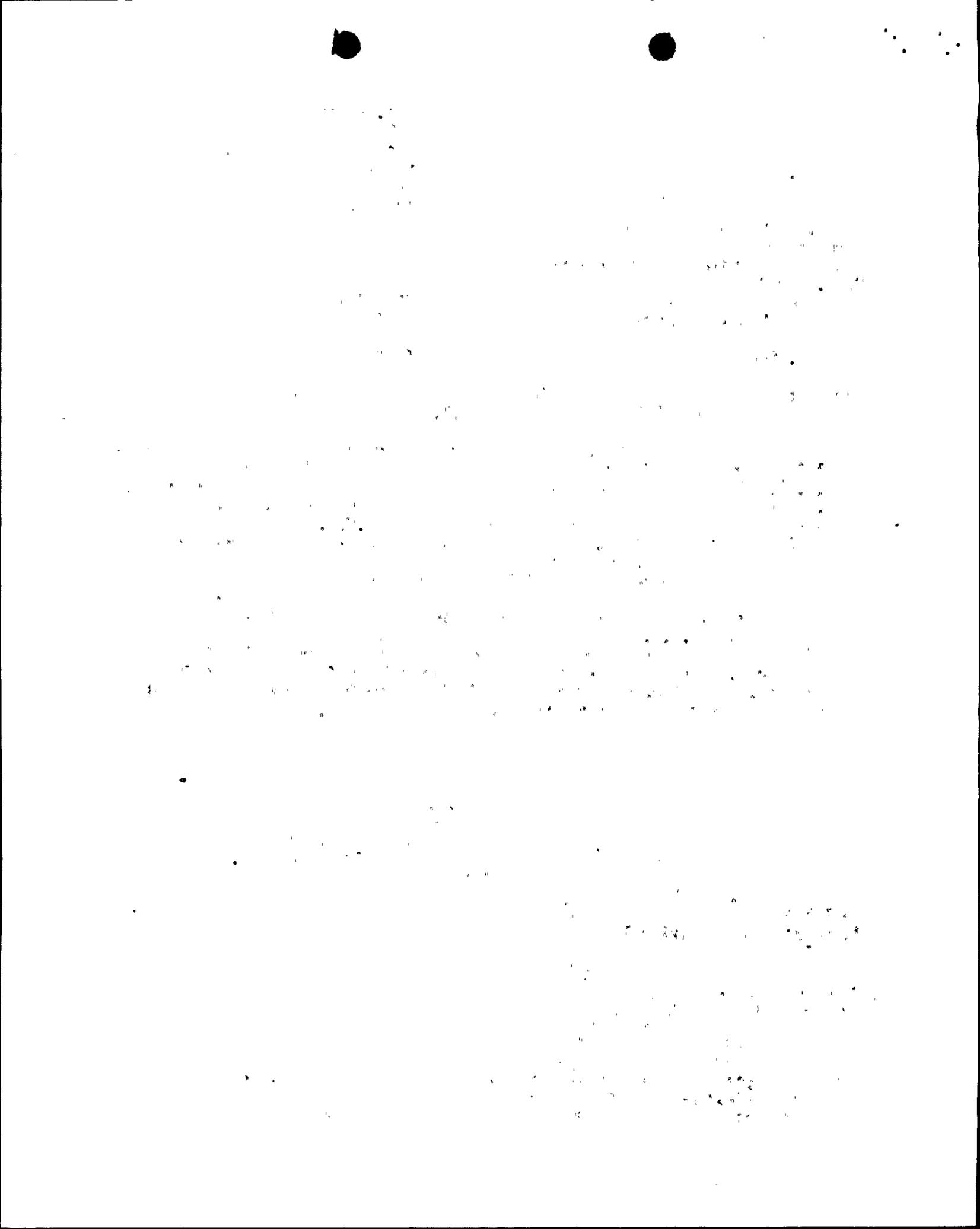
cc w/enclosure:
See next page

[Signature]
BWD-3:DBL
JBradfute/hmc
8/21/86

[Signature]
LA:BWD-3:DBL
EHylton
8/24/86

[Signature]
D:BWD-3:DBL
EAdensam
8/27/86

8609040400 860826
PDR · ADOCK 05000397
PDR



Mr. G. C. Sorensen, Manager
Washington Public Power Supply System

WPPSS Nuclear Project No. 2
(WNP-2)

cc:

Nicholas S. Reynolds, Esq.
Bishop, Liberman, Cook,
Purcell & Reynolds
1200 Seventeenth Street, N.W.
Washington, D.C. 20036

Regional Administrator, Region V
U.S. Nuclear Regulatory Commission
1450 Maria Lane, Suite 210
Walnut Creek, California 94596

Mr. G. E. Doupe, Esquire
Washington Public Power Supply System
P. O. Box 968
3000 George Washington Way
Richland, Washington 99532

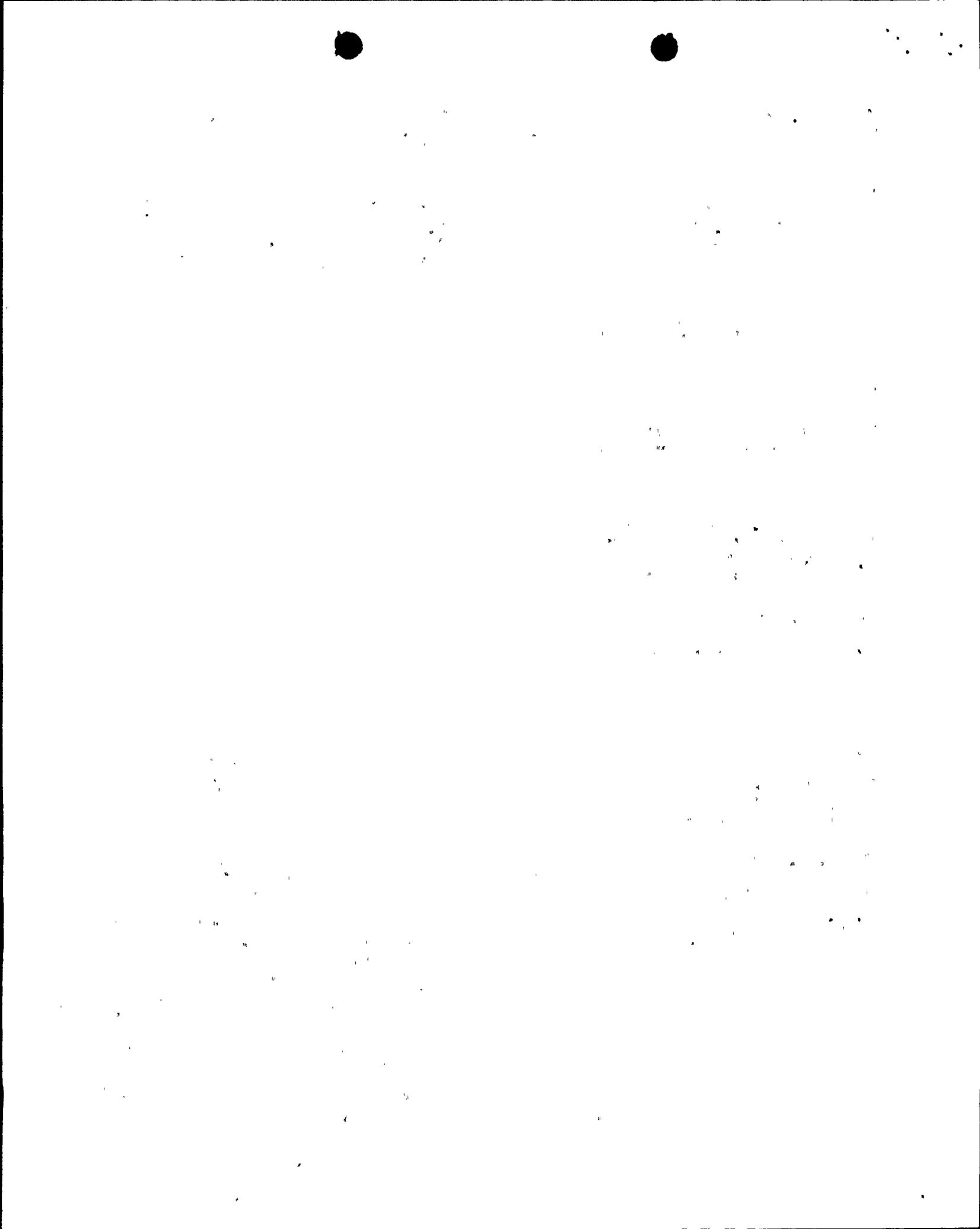
Mr. Curtis Eschels, Chairman
Energy Facility Site Evaluation Council
Mail Stop PY-11
Olympia, Washington 98504

P. L. Powell, Licensing Manager
Washington Public Power Supply System
P. O. Box 968, MD 956B
Richland, Washington 99352

Mr. W. G. Conn
Burns and Roe, Incorporated
c/o Washington Public Power Supply
System
P. O. Box 968, MD 994E
Richland, Washington 99352

R. B. Glasscock, Director
Licensing and Assurance
Washington Public Power Supply System
P. O. Box 968, MD 280
Richland, Washington 99352

Mr. C. M. Powers
WNP-2 Plant Manager
Washington Public Power Supply System
P. O. Box MD 927M
Richland, Washington 99352



WASHINGTON PUBLIC POWER SUPPLY SYSTEM

DOCKET NO. 50-397

WPPSS NUCLEAR PROJECT NO. 2

REQUEST FOR ADDITIONAL INFORMATION

The following discussion and requests relate to your request for amendment of Technical Specification 4.6.4.1, (Supply System letters of May 30, 1985 and January 17, 1986).

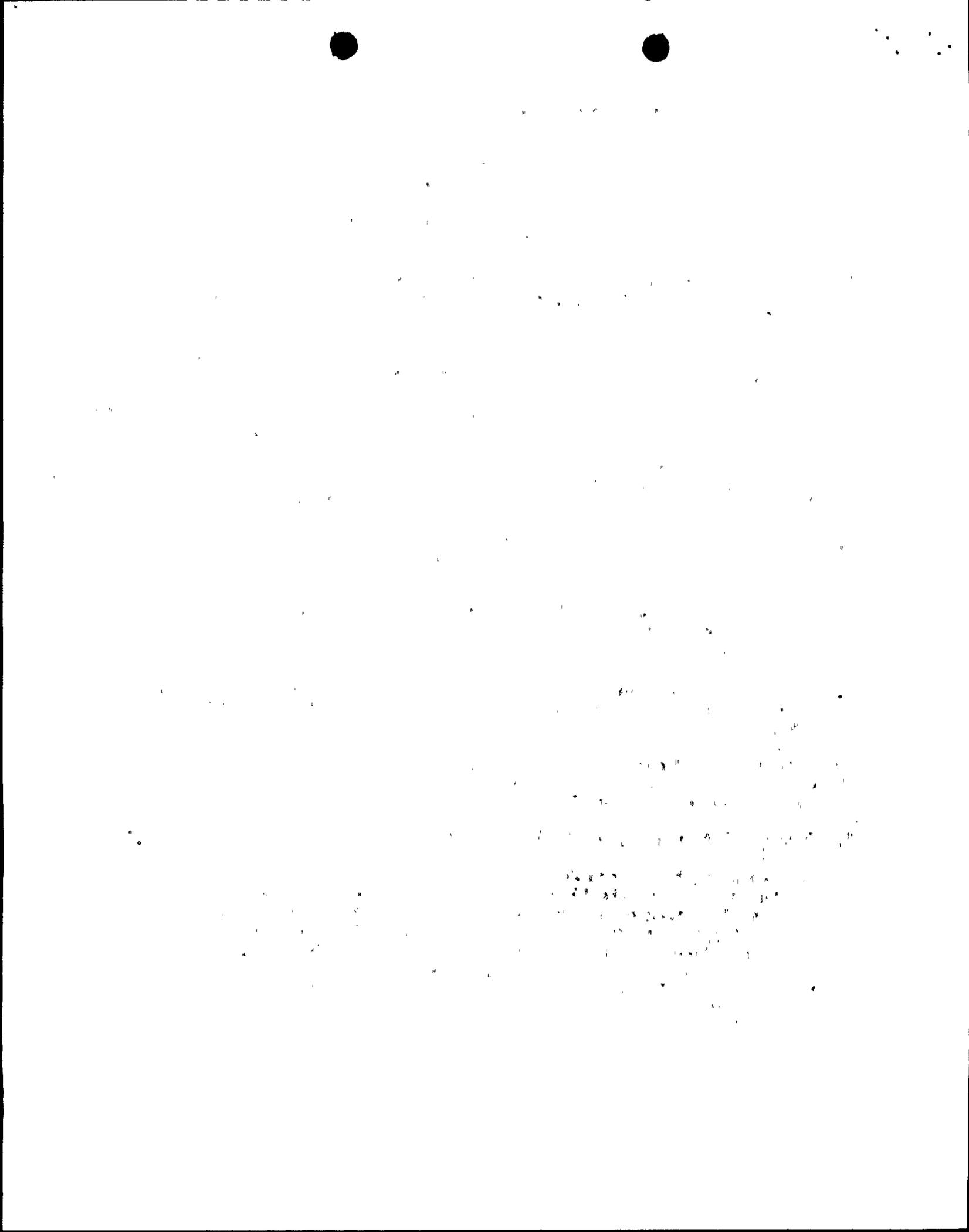
Based on our review of your submittals, the specific changes to Technical Specification 4.6.4.1 you are requesting are as follows:

1. Increase the interval between surveillance tests of the vacuum breaker valves from at least once per 31 days to at least once per 92 days.
2. Modify the surveillance procedure for the vacuum breaker valves to delete the requirement for "full stroke" cycling and substitute a requirement for "cycling" and verifying each valve to be in the fully closed position.
3. Delete the requirement that the vacuum breaker valves be cycled within two hours after any discharge of steam to the suppression chamber from the safety/relief valves.
4. Increase the interval between verifying the Operability of the vacuum breaker valve position indicators from at least once per 31 days to at least once per 92 days.
5. Change the designation of the 18 month examination of the vacuum breaker valve position indicators from a CHANNEL CALIBRATION to a CHANNEL FUNCTIONAL TEST.

Our review also indicates the justification provided for each of these proposed changes is either inadequate or is based upon faulty premises. The staff's basis for this conclusion is provided below.

1. Increase Interval Between Required Cycling Tests. (Specification 4.6.4.1.b.1)

In support of this proposed change, your submittal cites the redundancy of the vacuum breaker (check) valves and states this redundancy addresses the concern of a stuck open valve at the time of a DBA. Your submittal also expresses the belief the format in the standard Technical Specifications is based on a plant design having one vacuum breaker valve in lieu of the redundant design provided at WNP-2. Your submittal further cites the provisions of ASME Section XI which permit inservice testing of check valves at a quarterly frequency.



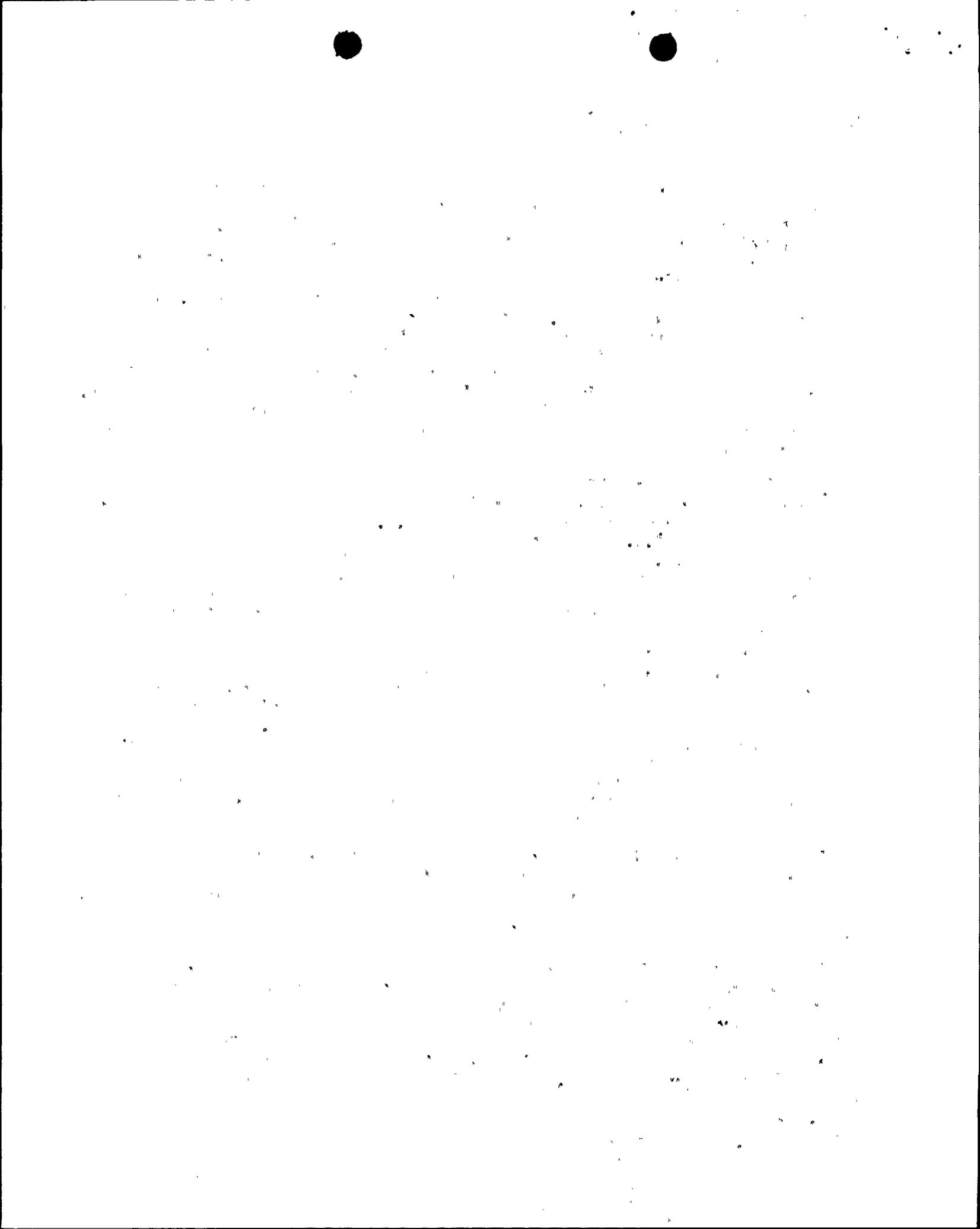
Regarding the redundancy of the vacuum breaker (check) valves, we note that, contrary to your claim, WNP-2 is not unique in this respect. In fact, to the best of our knowledge, all BWRs utilizing the Mark II Containment design incorporate redundant vacuum breaker valves. This is necessary because the performance of the Mark II design with respect to the Design Basis Accident is highly sensitive to bypass leakage. Further, the facility and the standard Technical Specifications both reflect this redundant valve design. This is evident from Specification 3.6.4.1 which requires that each pair of suppression chamber - drywell vacuum breakers be OPERABLE and closed. Based on these considerations, we conclude your premise that WNP-2 has a significantly unique design is incorrect, as is the belief that the Standard Technical Specifications are based on a design which utilizes a single valve as a vacuum breaker. Since these do not appear to be valid assumptions, we conclude they do not provide the necessary justification for the requested revision to the Technical Specifications.

Regarding ASME Section XI, we note the facility and Standard Technical Specifications already include, in Section 4.0.5, a requirement to perform the testing specified by Section XI. Further, Section 4.0.5.d states the Section XI requirements are "...in addition to other specified surveillance requirements.", and Section 4.0.5.e states "Nothing in the ASME...Code shall be construed to supersede the requirements of any Technical Specification." Based on these provisions, we conclude that if staff review at the time these surveillance requirements were developed had found the surveillance provided by ASME Section XI adequate, no additional surveillance would have been specified. However, because the performance of the Mark II containment is highly sensitive to bypass leakage, which in turn can be significantly affected by vacuum breaker performance, the staff has previously determined that surveillance beyond that provided by ASME Section XI should be required and has included such a requirement in the facility and Standard Technical Specifications. Based on these considerations, we conclude the Supply System's reference to the quarterly surveillance interval specified in ASME Section XI does not address the issue of the need for surveillance beyond that specified as a general requirement in the Code. Accordingly, we further conclude this argument does not provide justification for the proposed change.

Based on the foregoing, we conclude you have not provided sufficient justification for the proposed change in surveillance frequency to support a staff conclusion the change would not result in a reduction in the margin of safety.

2. Modify Surveillance Procedure. (Specification 4.6.4.1.b.1)

Your submittals did not provide a clear discussion of the difference between the present requirement to perform "full-stroke cycling" of the vacuum breaker valves during surveillance testing, and the proposed alternate which would require "cycling and verification the valves are closed". Your submittals did indicate your intention to increase the frequency of verification of valve closure from the present Technical Specification requirement of once per 7 days to "Daily". And, your submittals used this intended increased



frequency of verification to justify a reduced frequency of surveillance of the vacuum breaker valves. Your submittals, however, did not propose to revise the facility Technical Specifications to formalize this "Daily" verification as a requirement.

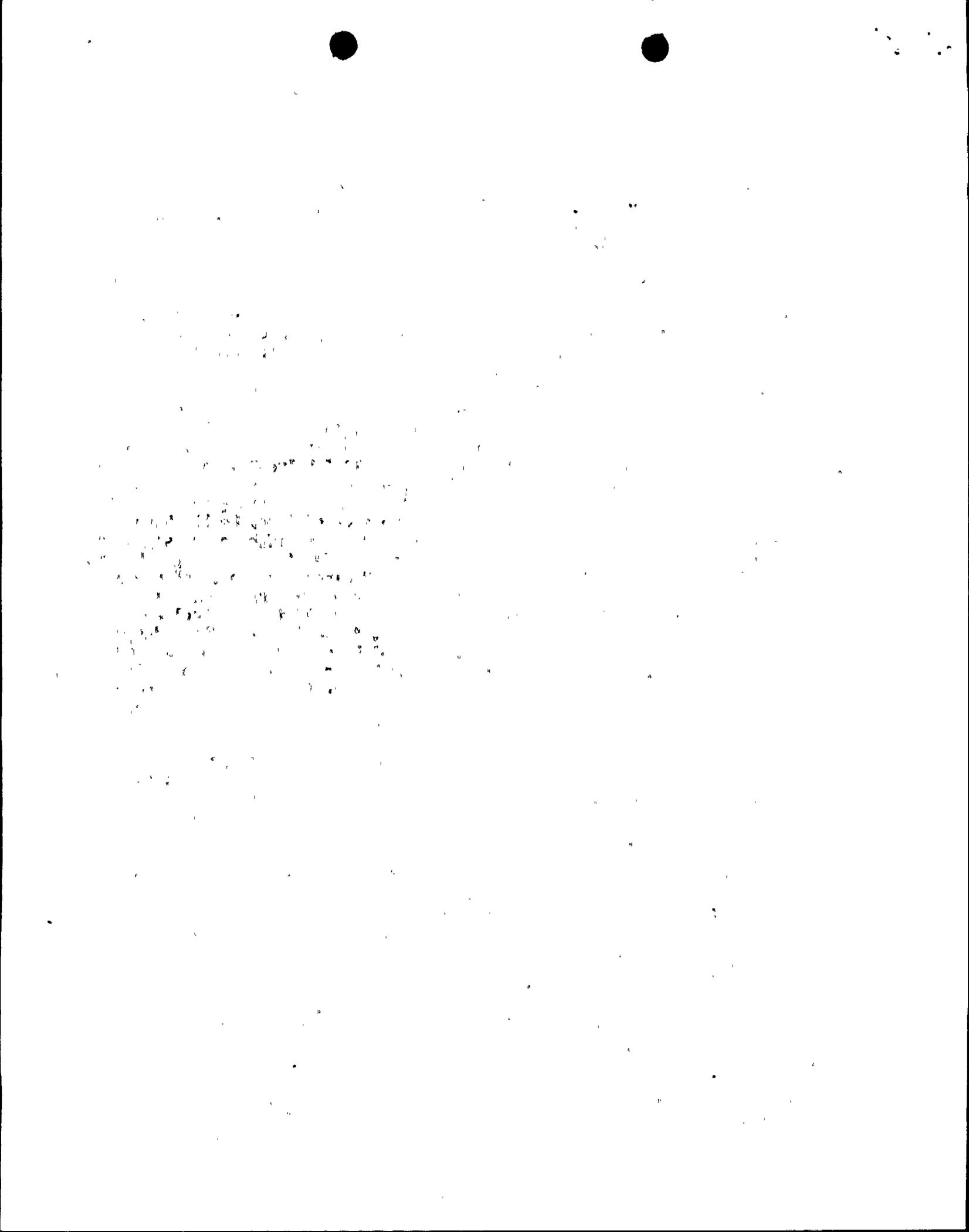
The staff considers full-stroke cycling an appropriate surveillance procedure for the vacuum breaker valves because it not only provides information on their ability to fully close, but also on the ability of the valve to fully open - and thereby deliver design flow. Accordingly, the staff does not agree that an undefined "cycling" procedure that only verifies valve closure is an acceptable substitute for the presently required full stroke cycling. Inasmuch as you have not provided any technical basis or analysis justifying the requested change, the staff has no basis for concluding the proposed revision would not reduce the present margin of safety.

3. Delete Required Surveillance Following Safety/Relief Valve Discharge To Suppression Pool. (Specification 4.6.4.1.b.1)

In support of this proposed revision, your submittals state the "...bases for cycling the vacuum breakers within two hours after discharge of steam to the suppression pool from a main steam safety relief valve is to vent the air injected into the wetwell air space from the SRV discharge line." Your submittals also state WNP-2 utilizes a dual disc design that under manual operating conditions limits actuation of one disc at a time to preclude establishing a bypass leakage path. From this, it follows the WNP-2 design does not enable venting of the suppression pool by valve actuation. Based on these premises, your submittal infers that because the purpose of valve stroking is to vent air from the suppression chamber following discharge of a safety/relief valve, and because the 'unique' design of the WNP-2 vacuum breakers does not permit such venting, this surveillance is not required.

The staff does not agree that venting air from the Suppression Chamber is the Basis for requiring full stroke cycling of all vacuum breakers within two hours following discharge of a safety/relief valve to the suppression chamber. If venting air was the only Basis, opening a single vacuum breaker would be sufficient.

While neither the facility nor the Standard Technical Specifications explicitly state the Basis for this requirement, it is clear the discharge of steam from the safety/relief valves to the suppression chamber may be of sufficient magnitude to cause a temperature increase and, hence, a pressure increase in the suppression pool. In addition, according to paragraph 3.8.2.1.3 of the WNP-2 FSAR, the 24-inch vacuum breaker valves begin to open when the differential pressure across the valve is in the range from 0.10 to 0.35 psi, and are fully open when the pressure difference is 0.50 psi. Thus, even modest increases in pressure could cause partial opening of all or most of the vacuum breakers. Further, due to the friction present in mechanical devices, and the design of the valve closing mechanism, partial opening of the valve is more likely to cause failure to re-close than would full opening. Any failures to re-close, of course, would provide a possible bypass leakage path which could degrade the effectiveness of the containment design.



Given the above considerations, we conclude prompt, full stroke exercising of the vacuum breaker valves following potential challenges (caused by safety/relief valve discharges to the Suppression Chamber) is a prudent action to assure the valves are properly re-closed following possible full or partial opening. Because you have not addressed this issue, we further conclude you have not provided sufficient justification for deletion of this requirement.

4. Increase Interval Between Required Verification of Valve Position Indicator Operability. (Specification 4.6.4.1.b.2)

Operable and properly adjusted vacuum breaker valve position indicators are important to operational safety because they are a means for identifying vacuum breaker valves that are open (thereby providing a possible bypass leakage path in the event of a LOCA). Because of this importance, the check of position indicator operability required by this provision of the Technical Specifications is keyed directly to the valve cycling required by Specification 4.6.4.1.b.1. That is, the Technical Specifications state the verification of position indicator operability is to be performed "...during the cycling test." Hence, any change to this specification should be coordinated with changes to Specification 4.6.4.1.b.1.

Regarding Specification 4.6.4.1.b.1, your proposed change to the frequency at which "valve cycling" tests would be performed was addressed in paragraph 1, above, where the staff concluded insufficient justification had been provided to warrant approval of the proposed change. Because of the close relationship between Specifications 4.6.4.1.b.1 and 4.6.4.1.b.2, and the importance to safety of both the valves and the operability of the valve position indicators, we conclude there is insufficient justification to warrant revising the surveillance frequency for the vacuum breaker valve position indicators.

5. Change CHANNEL CALIBRATION to CHANNEL FUNCTIONAL TEST. (Specification 4.6.4.1.b.3.b)

In support of this proposed change, your submittals state "The 18 month surveillance test is more suitably called a channel functional test and will verify proper operation of the interlock function." No discussion is provided, however, explaining why you believe this to be the case.

To evaluate this request, it is useful to refer to the definition of CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST as given in paragraphs 1.5 and 1.7 of the facility Technical Specifications. Briefly, the CHANNEL FUNCTIONAL TEST consists of injection of a simulated signal in a channel as close to the sensor as possible to verify OPERABILITY, including alarm or trip functions; while the CHANNEL CALIBRATION consists of adjustment such that the channel output responds with accuracy to known values of the parameter monitored by the channel. In other words, CHANNEL FUNCTIONAL TEST is a qualitative test, while a CHANNEL CALIBRATION is a quantitative verification of proper adjustment.



12

[The body of the document contains extremely faint and illegible text, likely bleed-through from the reverse side of the page. The text is scattered across the page and does not form any recognizable words or sentences.]

Based on these definitions, an operation in which one opened and closed a vacuum breaker valve and verified the position indicator lights indicated OPEN and CLOSED, as appropriate, would appear to be a CHANNEL FUNCTIONAL TEST. On the other hand, an operation in which one verified a valve was physically closed when the position indicator light indicated CLOSED, and in addition, examined the mounting of the position indicator sensor and made adjustments as necessary to locate the sensor within the design tolerance, would appear to be a CHANNEL CALIBRATION.

Based on the foregoing, the staff concludes the surveillance specified to be performed each 31 days in accordance with Specification 4.6.4.1.b.2 to verify position indicator Operability corresponds to the CHANNEL FUNCTIONAL TEST. On the same basis, the staff also concludes the surveillance specified to be performed each 18 months in accordance with Specification 4.6.4.1.3.b is intended, as stated, to be a CHANNEL CALIBRATION as defined in paragraph 1.5 of the facility Technical Specifications. Accordingly, the staff concludes the present Specification is properly drafted and insufficient justification has been provided thus far to warrant its revision.

The foregoing discussion presents the staff's concerns regarding the proposed revisions to the facility Technical Specifications and the basis for the conclusion that insufficient technical justification has been provided to support any of the requested changes. Accordingly, if you wish to amend the facility Technical Specifications as proposed, please provide additional justification for the proposed changes which addresses the concerns noted above, or amend your proposal appropriately.

