



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

FEB 14 1985

MEMORANDUM FOR: Victor Stello, Jr.,
Committee to Review Generic Requirements

FROM: Harold R. Denton, Director
Office of Nuclear Reactor Regulation

SUBJECT: PROPOSED TECHNICAL SPECIFICATION CHANGE AND NOTICE
REGARDING ACCEPTABLE PRESSURE ISOLATION VALVE (PIV)
IN-SERVICE TEST LEAK RATES

By this memorandum NRR is forwarding for CRGR review a proposed standard technical specification change. The effect of the proposed change will be to more realistically define the existing overly restrictive acceptance criteria for pressure isolation valve (PIV) in-service test leak rates. A proposed generic letter to nuclear plant owners is also included which provides implementation guidance.

The current staff position regarding acceptable in-service leak rates for pressure isolation valves, as noted in the Standard Technical Specifications, is (with the exception of Event V* valves on most operating reactors and some valves allowed a higher leak rate on a case-by-case basis) that these valves are allowed measured leak rates, during periodic in-service tests, of no more than one gallon-per-minute (gpm) for each valve, regardless of size. For Event V valves, leak rates up to 5 gpm are permitted provided that the margin between the previous test's leak rate and 5 gpm is not reduced by more than 50% in the current test.

It is proposed that the Standard Technical Specifications be changed to allow measured leak rates of one-half gpm for each inch of nominal valve size up to a maximum of 5 gpm. In addition, the requirements of paragraph IWV-3427 (b) of Section XI of the ASME-B&PV Code are to be applied in order to determine if the leak rates are acceptable. That paragraph states;

"For valves 6 in. nominal pipe size and larger, if a leakage rate exceeds the rate determined by the previous test by an amount that reduces the margin between measured leakage rate and the maximum permissible rate by 50% or greater, the test frequency shall be doubled; the tests shall be scheduled to coincide with a cold shutdown until corrective action is

*The "Event V" scenario is described in WASH-1400 as a LOCA caused by the failure of 2 check valves in series which then bypasses containment by subjecting a low pressure system to full RCS pressure.

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taken, at which time the original test frequency shall be resumed. If tests show a leakage rate increasing with time, and a projection based on three or more tests indicates that the leakage rate of the next scheduled test will exceed the maximum permissible leakage rate by greater than 10%, the valve shall be replaced or repaired."

Essentially, the effect of the ASME code paragraph is to restrict gross increases in acceptable leak rates. Note that inservice testing of safety-related valves in accordance with ASME Code Section XI is specified in 10 CFR 50.55a(g) and is, in turn, required by Standard Technical Specification 4.0.5. Thus, incorporation of this code paragraph in the Standard Technical Specifications is a reiteration of a requirement already required by the regulations. However, the requirement has not been implemented by licensees and applicants where the one gpm maximum leak rate was in effect and thus it is considered necessary to emphasize that the paragraph now applies.

Enclosure 1 indicates the proposed technical specification changes typical for both BWR and PWR Standard Technical Specifications. Individual plant technical specifications would be similar. A proposed generic letter to nuclear plant owners, enclosure 3, has been prepared. It is proposed to include copies of enclosure 1 along with the generic letter to licensees.

For the purposes of categorization in accordance with the requirements of NRR Office Letter No. 39, "NRR Procedures For Control And Review Of Generic Requirements," the proposed standard technical specification change is considered to be a Category 2 action. The basis for this categorization is that the proposed action is not an emergency action to protect the public health and safety nor is the action needed to overcome a prompt safety problem or legal requirement. Rather, the proposed technical specification change will constitute a relaxation and more realistic definition of the acceptance criteria for pressure isolation valve leak rates. Such relaxation of leak rate acceptance criteria is considered necessary primarily to reduce unnecessary valve maintenance, but also to reduce exposure of operating plant personnel to both radiation and live steam. The proposed criteria will also provide a more rational and uniform leak rate acceptance criteria than exists at the present time. The proposed criteria will maintain acceptable leak rates well within conservative limits of interfacing low pressure system capacity to absorb valve leakage. Also, the proposed criteria will provide acceptable assurance (when used concurrently with other required maintenance and tests) that PIV's are capable of performing their required barrier safety functions.

The primary benefit to the NRC of the proposed change is expected to be a reduction in staff review time for PIV test proposals on both OL's and OR's.

Enclosure 2 is a regulatory analysis, prepared in accordance with NRR Office Letter No. 16, which provides a detailed discussion of the background, issues and proposed acceptance criteria.

Licensees and applicants will not be required to adopt the proposed Standard Technical Specification change if they do not choose to do so. Also, the proposed change does not affect any existing licensing requirement or commitment regarding the list of valves to be tested.

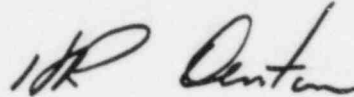
In response to item II.3. of NRR Office Letter No. 39 regarding steps that licensees will be required to carry out in order to comply with the proposed requirements, the following is offered:

1. There are no separate short term and long term requirements. The new PIV leak rate acceptance criteria can be implemented by licensees and NTOL applicants by changing individual plant technical specifications to the new requirement in accordance with standard procedures. Once the change has been made it is to remain in effect, thereafter, for the particular plant.
2. The change in leak rate acceptance criteria is considered definitive and complete.
3. No other requirements are affected by this proposed change.
4. No system changes involving physical modifications will be brought about by this change.
5. All other plant conditions will remain unaffected by the proposed change.
6. Plant shutdown would not be required in order to implement the proposed change.
7. This is not a design change involving NRC approval.
8. New equipment will not be required in order to implement the proposed change.
9. The proposed change requires no physical modifications to any plant. Formal technical specification changes, for those licensees and applicants wishing to adopt the new, less stringent test requirements, will be required. The staff will have no objections if any licensee or applicant chooses to retain his current criteria rather than implement the proposed leak rate criteria.

The revised Standard Technical Specifications regarding allowable leak rates for PIV's are to apply to all BWR's and PWR's on a non-retroactive basis. Applicants and licensees may adopt the new test leak rate criteria, in lieu of their existing commitments, at their option.

The actions proposed above are Category 2 and do not warrant accelerated review. Accordingly, it is requested that CRGR complete the review of this proposal within 15 calendar days. Since the proposed change will result in no degradation of safety and will also result in a reduction in costs to both NRC and the utilities, formal CRGR meeting may not be necessary. Please inform me within the next two weeks if a meeting is required. If a formal meeting will be necessary, please schedule as soon as possible.

The staff has received a request from Alabama Power Company, supported by leak test data and justifications, to initiate the proposed revision to leak rate acceptance criteria at Farley by October 6, 1984. This request has been reviewed and amendments to Farley Units 1 and 2 technical specifications were issued on October 5, 1984. Alabama Power Company previously requested similar approvals, each on a one time basis, and these requests were approved by the staff.



Harold R. Denton, Director
Office of Nuclear Reactor Regulation

Enclosures:

1. Drafts of Proposed Technical Specification (STS) Changes.
 - (a) Westinghouse PWR STS
 - (b) General Electric BWR-5 STS
2. Pressure Isolation Valve Leak Rate Testing - Regulatory Analysis
3. Proposed Generic Letter to Nuclear Plant Owner

cc: (w/enclosures)

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WESTINGHOUSE PWR STANDARD TECHNICAL SPECIFICATIONS

REACTOR COOLANT SYSTEM
OPERATIONAL LEAKAGE
LIMITING CONDITION FOR OPERATION

3.4.6.2 Reactor Coolant System leakage shall be limited to:

- a. No PRESSURE BOUNDARY LEAKAGE,
- b. 1 GPM UNIDENTIFIED LEAKAGE,
- c. 1 GPM total primary-to-secondary leakage through all steam generators not isolated from the Reactor Coolant System and (500) gallons per day through any one steam generator not isolated from the Reactor Coolant System,
- d. 10 GPM IDENTIFIED LEAKAGE from the Reactor Coolant System, and
- e. GPM CONTROLLED LEAKAGE at a Reactor Coolant System pressure of 2335 ± 20 psig.
- f. * 0.5 GPM leakage per nominal inch of valve size up to a maximum of 5 GPM at a Reactor Coolant System pressure of 2235 ± 20 psig from any Reactor Coolant System Pressure Isolation Valve specified in Table 3.4-1.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

- a. With any PRESSURE BOUNDARY LEAKAGE, be in at least HOT STANDBY within 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With any Reactor Coolant System leakage greater than any one of the above limits, excluding PRESSURE BOUNDARY LEAKAGE and leakage from Reactor Coolant System Pressure Isolation Valves, reduce the leakage rate to within limits within 4 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- c. With any Reactor Coolant System Pressure Isolation Valve leakage greater than the above limit, isolate the high pressure portion of the affected system from the low pressure portion within 4 hours by use of at least two closed manual or deactivated automatic valves,

*Replaced the phrase "One GPM Leakage."

REACTOR COOLANT SYSTEM
SURVEILLANCE REQUIREMENTS

or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

4.4.6.2.1 Reactor Coolant System leakages shall be demonstrated to be within each of the above limits by:

- a. Monitoring the containment atmosphere (gaseous or particulate) radioactivity monitor at least once per 12 hours.
- b. Monitoring the containment pocket sump inventory and discharge at least once per 12 hours.
- c. Measurement of the CONTROLLED LEAKAGE to the reactor coolant pump seals when the Reactor Coolant System pressure is 2235 ± 20 psig at least once per 31 days with the modulating valve fully open. The provisions of Specification 4.0.4 are not applicable for entry into MODE 3 or 4.
- d. Performance of a Reactor Coolant System water inventory balance at least once per 72 hours.
- e. Monitoring the reactor head flange leakoff system at least once per 24 hours.

4.4.6.2.2 Each Reactor Coolant System Pressure Isolation Valve specified in Table 3.4-1 shall be demonstrated OPERABLE pursuant to Specification 4.0.5, except that in lieu of any leakage testing required by Specification 4.0.5, each valve shall be demonstrated OPERABLE by verifying leakage to be within its limit:

- a. At least once per 18 months.
- b. Prior to entering MODE 2 whenever the plant has been in COLD SHUTDOWN for 72 hours or more and if leakage testing has not been performed in the previous 9 months.
- c. Prior to returning the valve to service following maintenance, repair or replacement work on the valve.
- d. Within 24 hours following valve actuation due to automatic or manual action or flow through the valve.
- *e. As outlined in the ASME Code, Section XI, paragraph IWV-3427 (b). |

The provisions of Specification 4.0.4 are not applicable for entry into MODE 3 or 4.

*Added.

GENERAL ELECTRIC BWR-5 STANDARD TECHNICAL SPECIFICATIONS

REACTOR COOLANT SYSTEMOPERATIONAL LEAKAGELIMITING CONDITION FOR OPERATION

3.4.3.2 Reactor coolant system leakage shall be limited to:

- a. No PRESSURE BOUNDARY LEAKAGE.
- b. 5 gpm UNIDENTIFIED LEAKAGE.
- c. 25 gpm total leakage averaged over any 24-hour period.
- d. *0.5 gpm leakage per nominal inch of valve size up to a maximum of 5 gpm from any reactor coolant system pressure isolation valve specified in Table 3.4.3.2-1., at full power temperature and pressure.
- (e. 2 gpm increase in UNIDENTIFIED LEAKAGE within any 4-hour period.)

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3.

ACTION:

- a. With any PRESSURE BOUNDARY LEAKAGE, be in at least HOT SHUTDOWN within 12 hours and in COLD SHUTDOWN within the next 24 hours.
- b. With any reactor coolant system leakage greater than the limits in b and/or c, above, reduce the leakage rate to within the limits within 4 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
- c. With any reactor coolant system pressure isolation valve leakage greater than the above limit, isolate the high pressure portion of the affected system from the low pressure portion within 4 hours by use of at least two closed manual or deactivated automatic valves, or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
- (d. With any reactor coolant system leakage greater than the limit in e above, identify the source of leakage within 4 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.)

*Replaced the phrase "One GPM Leakage."

REACTOR COOLANT SYSTEM
SURVEILLANCE REQUIREMENTS

4.4.2.3.2.1 The reactor coolant system leakage shall be demonstrated to be within each of the above limits by:

- a. Monitoring the primary containment atmospheric particulate (and/or gaseous) radioactivity at least once per (4) (12) hours,
- b. Monitoring the primary containment sump flow rate at least once per (4) (12) hours,
- c. Monitoring the primary containment air coolers condensate flow rate at least once per (4) (12) hours, and
- d. Monitoring the reactor vessel head flange leak detection system at least once per 24 hours.

4.4.3.2.2 Each reactor coolant system pressure isolation valve specified in Table 3.4.3.2-1 shall be demonstrated OPERABLE pursuant to Specification 4.0.5, except that in lieu of any leakage testing required by Specification 4.0.5, each valve shall be demonstrated OPERABLE by verifying leakage to be within its limit:

- a. At least once per 18 months.
- b. Prior to entering HOT SHUTDOWN whenever the plant has been in COLD SHUTDOWN for 72 hours or more and if leakage testing has not been performed in the previous 9 months.
- c. Prior to returning the valve to service following maintenance, repair or replacement work on the valve.
- d. Within 24 hours following valve actuation due to automatic or manual action or flow through the valve.
- *e. As outlined in the ASME Code, Section XI, paragraph IWV-3427 (b). |

*Added.

Enclosure (2)

REGULATORY ANALYSIS
PROPOSED REDEFINITION OF ACCEPTANCE CRITERIA FOR
PRESSURE ISOLATION VALVE IN-SERVICE TEST LEAK RATES

Pressure isolation valves (PIV) are those valves in the primary reactor coolant system which isolate the boundary between the higher pressure reactor coolant and connected lower pressure piping systems. The boundary is considered to be immediately past the second valve in series from the reactor pressure. The NRC requires that these valves have their leak tight integrity verified periodically in accordance with Section XI of the ASME Code (referred to hereafter as "the code"). The code allows acceptable leak rates to be defined in the technical specifications for a particular plant. Currently, most technical specifications allow a maximum leak rate of one gallon-per-minute (gpm) for each PIV, with the exception of Event V valves as noted below.

The staff is proposing to allow applicants and licensees to change the criteria for acceptable leak rates for PIV's to the following:

Allowable leak rate for a particular valve shall be no greater than one-half gallon-per-minute for each nominal inch of valve size. That is:

Maximum Allowable Leak Rates
Vs. Nominal Valve Size

<u>Valve Size</u> <u>(Nominal-inches)</u>	<u>Maximum Allowable⁽¹⁾</u> <u>Leak Rate (gpm)</u>
1 _____	1/2
2 _____	1
3 _____	1 1/2
4 _____	2
5 _____	2 1/2
6 _____	3
7 _____	3 1/2

⁽¹⁾For valve sizes in between those noted, the maximum allowable leak rate may be obtained by linear interpolation.

Maximum Allowable Leak Rates
Vs. Nominal Valve Size
(Continued)

<u>Valve Size</u> <u>(Nominal-inches)</u>	<u>Maximum Allowable⁽¹⁾</u> <u>Leak Rate (gpm)</u>
8 _____	4
9 _____	4 1/2
10 _____	5
Over 10 _____	5

In addition, the indexing criteria outlined in the ASME B&PV Code Section XI, paragraph IWV-3427 (b) shall be used to determine if the valve leak rate is acceptable.

The ASME Code paragraph IWV-3427(b) states;

"(b) For valves 6 in. nominal pipe size and larger, if a leakage rate exceeds the rate determined by the previous test by an amount that reduces the margin between measured leakage rate and the maximum permissible rate by 50% or greater, the test frequency shall be doubled; the tests shall be scheduled to coincide with a cold shutdown until corrective action is taken, at which time the original test frequency shall be resumed. If tests show a leakage rate increasing with time, and a projection based on three or more tests indicates that the leakage rate of the next scheduled test will exceed the maximum permissible leakage rate by greater than 10%, the valve shall be replaced or repaired."

Leak testing of pressure isolation valves with water as the test fluid is the method used to verify pressure isolation valve integrity. To date, leak testing is the only method known that will reliably indicate that the valve can perform its pressure isolation function. The NRC staff has not precluded the possibility that other methods of assuring isolation valve integrity such as acoustic emission testing, radiography, leak testing using a fluid other than water, etc. might be acceptable. However, no alternative proposals have, as yet, been received.

The original leak rate acceptance criteria was promulgated by the staff in response to the requirement to establish allowable leak rates for the so-called "Event V" as described in WASH 1400. In the Event V scenario, the failure of two check valves in series would subject a low pressure system outside of a PWR containment to full reactor pressure, hence rupturing the low pressure piping and causing a LOCA which would bypass containment.

The leak rate acceptance criteria outlined in the Event V license modification orders (issued in mid-1980) were, typically, as follows:

(1) For valve sizes in between those noted, the maximum allowable leak rate may be obtained by linear interpolation.

- Leakage rates less than or equal to 1.0 gpm are considered acceptable.
- Leakage rates greater than 1.0 gpm but less than or equal to 5.0 gpm are considered acceptable if the latest measured rate has not exceeded the rate determined by the previous test by an amount that reduces the margin between the measured leakage rate and the maximum permissible rate of 5.0 gpm by 50% or greater.
- Leakage rates greater than 5.0 gpm are considered unacceptable.

The Event V orders were promulgated in order to address what was perceived to be an immediate need at operating reactors. For subsequent near term operating license (NTOL) actions the requirement for in-service leak testing was extended to all PIV's (first and second valve in series leading away from reactor coolant pressure) either inside or outside containment and including both BWR and PWR plants. In general, for operating reactors, the leak rate acceptance criteria for Event V valves was imposed on all PIV's. For NTOL reviews, a maximum leak rate of one gpm, generally without qualification, was imposed for all PIV's. The stricter acceptance criteria was imposed on the newer plants because it was considered that the valves could meet the standard, being newer and supposedly having valves in better condition. Thus it is concluded that the acceptance criteria of a maximum leakage through each PIV of one gpm was somewhat arbitrary. It was established, ad-hoc by the staff based on a very conservative assessment of the capacity of the pressure relief systems in the plants.

The one gpm acceptance criteria is, as far as is known, not an indicator of imminent accelerated deterioration of valves or of potential valve failure. As noted in the referenced paragraph of the ASME Code, IWV-3427 (b), which is to be used in the proposed acceptance criteria and in the original acceptance criteria for the Event V PIV's, the monitoring of leak rate trends is expected to provide an indication of accelerated valve deterioration and thus provide at least as good assurance of valve performance as a flat leak rate allowance, regardless of the maximum allowable leak rate value. In that sense, the proposed leak rate acceptance criteria is considered to be an improvement over the one gpm criteria.

Regardless of the leak rate allowed for each pressure isolation valve, plant technical specifications limit the allowable leakage from the reactor coolant system as a whole. This restriction effectively eliminates the possibility of large increases in leakage from a number of valves in the RCS. The increase in allowable individual valve leakage will have no impact on allowable leakage from the total RCS system.

The staff had a study prepared on the subject of leak test requirements for PIV's (Inservice Leak Testing of Primary Pressure Isolation Valves, R. A. Livingston, EGG-NTAP-6175, February, 1983, FIN A6367, which will be referred to hereafter as "the EGG study"). As part of the EGG study, a survey was conducted of nine licensees in order to obtain information regarding actual in-plant experience with both the one gpm and Event V leak test criteria. In the EGG study, it was concluded that allowable leak rate criteria such as that which the staff has proposed should be adopted.

In the EGG study it was recommended that the owner should be allowed the option of a higher allowance of leakage for specific valves if justified by an analysis of overpressure protection and radiological processing capability showing that Code Section III and FSAR conclusions are not violated by the higher leakage allowance. As pointed out previously in this regulatory analysis, plant technical specifications provide controls of overall system leakage (see enclosure 1 to the CRGR memorandum). The leakage change proposed is only applicable to individual valves and therefore the ASME Section III and FSAR requirements for overpressure protection and radiological processing capability remain unchanged for each plant.

NRC has received a formal request from Alabama Power Company (Farley 1&2) for relaxation of leak-rate acceptance criteria to something similar to that proposed. Alabama Power Company (APCo) has provided actual leakage data accumulated over approximately two years of leak testing the valves for Units 1 and 2 to the two different criteria (one gpm vs. Event V criteria). APCo provided the following historical data: The Unit 1 valves have been exposed to sixteen tests in past outages and resulted in six failures when the utility had arbitrarily imposed the Unit 2 one gpm criteria. Personnel radiation exposure was estimated to be 25 person rem to meet the 1 gpm criteria, but only 2.5 person rem to meet the 1 to 5 gpm criteria. The utility also states that, of the valves which failed the 1 gpm criteria compared with those that failed the 1 to 5 gpm criteria, no discernible differences in seating surfaces could be found, and no evidence of impending valve failures were found in any of the valves that failed either criterion.

The primary objective of the staff in allowing the higher in-service test leak rates is to decrease the time spent on unnecessary maintenance of the valves. Such maintenance has several detrimental effects. Needless maintenance contributes to faster deterioration of equipment and thus is considered to be a factor in decreasing the overall system safety. In addition, reductions in radiation exposure of maintenance personnel are to be expected. It is considered that the worker exposure for valve maintenance can be lowered and this is consistent with the ALARA policy. From the survey conducted in the EGG study, as well as conversations with owner's representatives (Farley, Sequoyah) it was concluded that considerable maintenance time in radiation environment is expended in repair of valves to achieve the required leak rates. ERRI Report NP-241, Assessment of Industry Valve Problems, Sect. VI, c indicates that 30% of all plant maintenance in electrical generating facilities is attributable to valves. Also, a study (EPRI Report NP-3220, Cobalt Contamination Resulting From Valve Maintenance) has shown that valve maintenance is a significant contributor to transportation of cobalt into the primary coolant. Reduction of unnecessary maintenance would reduce the spread of contamination. However, meaningful data to quantify the expected savings in personnel exposure on an industry wide basis is not available.

There will be a net decrease in costs to NRC as the result of adoption of the proposed technical specification modification. This will result from shorter staff review times since the proposed criteria are much easier to justify technically than the arbitrary one gpm leak-rate. Owners who choose to adopt the modified technical specifications are expected to realize a cost savings which has not been estimated by the staff. Owners will not have any increases in plant complexity as the result of implementing these changes. Again, a quantitative estimate of the savings to be expected is not available.

The schedule for implementing the proposed technical specification change is open-ended. That is, owners may seek to implement the revised technical specifications by making application to suit their own scheduling requirements.

With respect to the quantity of allowable leakage an alternative would be to increase the allowable leakage beyond that recommended above. Several licensees have, from time to time, requested allowable leakage rates as high as 10 gpm. The choice of 5 gpm as an absolute maximum allowable leakage rate is based on the experience gained from the plants using this standard in compliance with the Event V orders. Such experience indicates that the desired results are obtained, namely timely maintenance of valves in need of repair without excessive maintenance or plant down-time. Allowable leak rates beyond 5 gpm are therefore not considered conservative because of a lack of experience.

Another possible alternative would be to delete the proposed requirement to relate valve allowable leakage to nominal size. The rationale for recommending leak rates related to valve size was based on the recommendations contained in the EGG study. The proposed approach is more conservative than the acceptance criteria of the Event V orders as far as total leakage allowed is concerned. However, the proposed leak rate indexing criteria as outlined on page 2 of this enclosure is somewhat less conservative than that contained in the Event V orders. The indexing criteria in the Event V orders indicated that the leakage rate for any size valve which was greater than the leakage rate measured in the last previous test by an amount which would reduce the margin between the latest measured leak rate and the maximum leak rate (5 gpm) by more than 50 percent was unacceptable. Thus it is considered that reducing allowable leakage rates for smaller valves is a trade off to retain the same level of conservatism as contained in the Event V orders.

Since no additional data is to be collected by NRC from owners under the proposed technical specification change, OMB clearance, under procedures outlined in NRR Office Letter No. 32, is not required. It is proposed to issue a generic letter to all reactor licensees and holders of construction permits informing them of the staff's action in this matter. However, no reply will be required. A draft of the proposed generic letter is included in this package as enclosure (3).

The proposed modification to PIV leakage rate acceptance criteria does not involve a "significant hazards consideration." The Commission has provided guidance concerning changes that constitute a significant hazards consideration as well as those that do not (48 FR 14870). One of the examples of actions involving no significant hazards relates to a change which either may result in some increase to the probability or consequences of a previously-analyzed accident or may reduce in some way a safety margin, but where the results of the change are clearly within all acceptance criteria with respect to the system or component specified in the Standard Review Plan. The proposed change is in that category since overall system leakage allowances will remain unchanged. The proposed leak rate acceptance criteria is no more than a refinement of the technical specifications based on observation and experience.

ENCLOSURE (3)

Draft Generic Letter to All Nuclear Power Plant Owners
Regarding Staff Positions on Pressure Isolation Valve Leak Rates.

TO: ALL LICENSEES OF OPERATING REACTOR PLANTS AND HOLDERS OF CONSTRUCTION PERMITS

SUBJECT: PRESSURE ISOLATION VALVE LEAK RATE TESTING CRITERIA.

Gentlemen:

The NRC staff has revised its acceptance criteria for pressure isolation valve leak rates to the following:

Allowable leak rate for a particular valve shall be no greater than one-half gallon-per-minute for each nominal inch of valve size. That is:

<u>Maximum Allowable Leak Rates</u> <u>Vs. Nominal Valve Size</u>	
<u>Valve Size</u> <u>(Nominal-inches)</u>	<u>Maximum Allowable⁽¹⁾</u> <u>Leak Rate (gpm)</u>
1 _____	1/2
2 _____	1
3 _____	1 1/2
4 _____	2
5 _____	2 1/2
6 _____	3
7 _____	3 1/2
8 _____	4
9 _____	4 1/2
10 _____	5
Over 10 _____	5

(1) For valve sizes in between those shown, the maximum allowable leak rate may be obtained by linear interpolation.

In addition, the indexing criteria outlined in the ASME B&PV Code Section XI, paragraph IWV-3427 shall be used to determine if the valve leak rate is acceptable.

You may retain your existing leak rate acceptance standard, as outlined in the current plant technical specifications, if you so choose. If you wish to adopt the acceptance standard outlined above you may request to do so by submitting a letter along with the proposed technical specification change, as well as proposed changes to the pertinent sections of your IST program. If you choose to make the change, the criteria outlined above must be adopted in full; partial adoption is not acceptable. Copies of pertinent portions of BWR and PWR technical specifications are included for your information. These show the proposed changes.

This criteria change does not affect any licensing requirement regarding the choice of valves for testing.

Office of Management and Budget approval is not required since this letter does not involve a request for information.

Darrell G. Eisenhut, Director
Division of Licensing

Internal Distribution:

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R. Mattson	O. Rothberg	

Enclosures:
As stated

Concurrence:

D. Eisenhut	R. Benero
DIR/DL	DIR/DSI

O. Rothberg	F. Cherny	R. Bosnak	J. Knight	R. Vollmer	H. Denton
MEB	MEB	CH. MEB	AD/CSE	DIR/CSE	DIR/NRR