

Docket File  
50-334

REGULATORY DOCKET FILE COPY  
DECEMBER 4 1979

Docket No. 50-334

Mr. C. N. Dunn, Vice President  
Operations Division  
Duquesne Light Company  
435 Sixth Avenue  
Pittsburgh, Pennsylvania 15219

Dear Mr. Dunn:

The Commission has issued the enclosed Amendment No. *12* to Facility Operating License No. DPR-66 for the Beaver Valley Nuclear Power Station, Unit No. 1. The amendment consists of changes to the Technical Specifications in response to your application transmitted by letter dated October 28, 1976, as supplemented October 10, 1977, June 12, 1978, July 24, 1978 and August 10, 1979.

This amendment approves your Beaver Valley Unit No. 1 inservice inspection (ISI) program and provides relief where appropriate. The ISI program approved in the enclosed supporting staff Safety Evaluation (SE) supercedes the interim ISI direction provided by letter dated April 29, 1977. However, the provision of the April 29, 1977 letter with respect to your inservice testing (IST) program for pumps and valves, as may be supplemented by your May 2, 1979 submittal, remain in effect. The approval of your IST program will be the subject of a separate license amendment. We have discussed the contents and conditions of this license amendment with members of your staff and we understand that you are aware of the contents of this license amendment. Nevertheless, you understand that by the provisions of 10 CFR Part 2 paragraph 2.204, you may demand a hearing with respect to all or any part of the amendment within twenty (20) days from the date of this letter. If you do not demand a hearing, this amendment will become effective on the expiration of that twenty (20) day period.

Table 1 of the enclosed SE delineates those items for which relief has been granted and alternative examinations defined. We are granting this relief and imposing alternative examinations based on our review of the information you submitted to support your determinations that certain ASME Code requirements would be impractical for your facility. We have determined that the granting of this relief is authorized by law and will not endanger life or property, or the common defense and security, and will

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SURNAME ▶						
DATE ▶						
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Mr. C. N. Dunn  
Duquesne Light Company

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otherwise be in the public interest. In making this determination we have given due consideration to the burden that could result if these requirements were imposed on your facility. We have determined that the granting of this relief does not involve a significant increase in the probability or consequences of accidents previously considered nor a decrease in safety margin; and thus, does not involve a significant hazards consideration. Furthermore, we have determined that the granting of this relief from ASME Code requirements does not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. We have concluded that the granting of this relief is insignificant from the standpoint of environmental impact and pursuant to 10 CFR 51.5(d)(4) that neither an environmental impact statement nor a negative declaration and environmental impact appraisal need to be prepared in connection with this action.

The relief from ASME Code requirements granted by the SE shall remain in effect until specifically revoked by the NRC or until the end of the 120-month period beginning September 30, 1976.

We have determined that no license amendment fee is required to accompany your justification for relief for pending items. For the Beaver Valley Unit No. 1, the pending items include radiographic examination of the reactor coolant pump casing welds and the augmented inspections required for the systems identified in your August 10, 1979 letter. This fee determination is limited to items which are being reviewed as part of our request to implement the requirements of 10 CFR 50.55a. Any other unrelated changes or requests that you might choose to include at this time would be subject to amendment fees in accordance with 10 CFR 170.22.

Copies of the Safety Evaluation and the Notice of Issuance are also enclosed.

Sincerely,

Original Signed By

A. Schwencer, Chief  
Operating Reactors Branch #1  
Division of Operating Reactors

Enclosures:

1. Amendment No. *22* to DPR-66
2. Safety Evaluation
3. Notice of Issuance

cc: w/enclosures  
See next page

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DATE						

Distribution

Docket File 50-334	I&E (5)	OELD
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B. Grimes	R. Diggs	
W. Gammill	H. Denton	
R. Vollmer	ACRS (16)	
C. Parrish	TERA	
D. Wigginton	J. Buchanan	

\*SEE PREVIOUS YELLOW FOR CONCURRENCE

*AS 12/1/79*

OFFICE ▶	DOR:ORB1*	DOR:ORB1*	DOR:ORB3	DOR:AD:ORP*	OELD*	DOR:ORB1*
SURNAME ▶	DWigginton	CSParrish	<i>P. Polk</i>	WPGammill	SSohinki	ASchwencer
DATE ▶	09/28/79	09/28/79	12/1/79	10/14/79	09/ /79	10/01/79

Distribution

Docket File 50-334 I&E (5)

OELD

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Docket No. 50-334

Mr. C. N. Dunn, Vice President  
Operations Division  
Duquesne Light Company  
435 Sixth Avenue  
Pittsburgh, Pennsylvania 15219

Dear Mr. Dunn:

The Commission has issued the enclosed Amendment No. to Facility Operating License No. DPR-66 for the Beaver Valley Nuclear Power Station, Unit No. 1. The amendment consists of changes to the Technical Specifications in response to your application transmitted by letter dated October 28, 1976, as supplemented October 10, 1977, June 12, 1978, July 24, 1978 and August 10, 1979.

The amendment approves your Beaver Valley Unit No. 1 inservice inspection program and provides relief where appropriate. Relief from certain inservice inspection requirements is hereby granted as discussed in the enclosed Safety Evaluation (SE). We have determined that the granting of this relief is authorized by law and will not endanger life or property or the common defense and security and is otherwise in the public interest. This relief is granted, except for certain requirements as discussed in the SE. The inservice testing program for pumps and valves as submitted by your May 2, 1979 letter is under review and will be the subject of a separate license amendment.

Copies of the Safety Evaluation and the Notice of Issuance are also enclosed.

Sincerely,

A. Schwencer, Chief  
Operating Reactors Branch #1  
Division of Operating Reactors

Enclosures:

- 1. Amendment No. to DPR-66
- 2. Safety Evaluation
- 3. Notice of Issuance

*Carry on to form of request ad notice only*  
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S. 5014 NRC/MS

09/1/79

OFFICE	DOR:ORB1	DOR:ORB1	DOR:AD/DRP	DOR:ORB1
SURNAME	DWigginton:jb	CSParrish	WPGammill	ASchwencer
DATE	09/28/79	09/28/79	10/7/79	10/1/79



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

December 4, 1979

Docket No. 50-334

Mr. C. N. Dunn, Vice President  
Operations Division  
Duquesne Light Company  
435 Sixth Avenue  
Pittsburgh, Pennsylvania 15219

Dear Mr. Dunn:

The Commission has issued the enclosed Amendment No. 22 to Facility Operating License No. DPR-66 for the Beaver Valley Nuclear Power Station, Unit No. 1. The amendment consists of changes to the Technical Specifications in response to your application transmitted by letter dated October 28, 1976, as supplemented October 10, 1977, June 12, 1978, July 24, 1978 and August 10, 1979.

This amendment approves your Beaver Valley Unit No. 1 inservice inspection (ISI) program and provides relief where appropriate. The ISI program approved in the enclosed supporting staff Safety Evaluation (SE) supercedes the interim ISI direction provided by letter dated April 29, 1977. However, the provision of the April 29, 1977 letter with respect to your inservice testing (IST) program for pumps and valves, as may be supplemented by your May 2, 1979 submittal, remain in effect. The approval of your IST program will be the subject of a separate license amendment. We have discussed the contents and conditions of this license amendment with members of your staff and we understand that you are aware of the contents of this license amendment. Nevertheless, you understand that by the provisions of 10 CFR Part 2 paragraph 2.204, you may demand a hearing with respect to all or any part of the amendment within twenty (20) days from the date of this letter. If you do not demand a hearing, this amendment will become effective on the expiration of that twenty (20) day period.

Table 1 of the enclosed SE delineates those items for which relief has been granted and alternative examinations defined. We are granting this relief and imposing alternative examinations based on our review of the information you submitted to support your determinations that certain ASME Code requirements would be impractical for your facility. We have determined that the granting of this relief is authorized by law and will not endanger life or property, or the common defense and security, and will

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Mr. C. N. Dunn  
Duquesne Light Company

- 2 - December 4, 1979

otherwise be in the public interest. In making this determination we have given due consideration to the burden that could result if these requirements were imposed on your facility. We have determined that the granting of this relief does not involve a significant increase in the probability or consequences of accidents previously considered nor a decrease in safety margin; and thus, does not involve a significant hazards consideration. Furthermore, we have determined that the granting of this relief from ASME Code requirements does not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. We have concluded that the granting of this relief is insignificant from the standpoint of environmental impact and pursuant to 10 CFR 51.5(d)(4) that neither an environmental impact statement nor a negative declaration and environmental impact appraisal need to be prepared in connection with this action.

The relief from ASME Code requirements granted by the SE shall remain in effect until specifically revoked by the NRC or until the end of the 120-month period beginning September 30, 1976.

We have determined that no license amendment fee is required to accompany your justification for relief for pending items. For the Beaver Valley Unit No. 1, the pending items include radiographic examination of the reactor coolant pump casing welds and the augmented inspections required for the systems identified in your August 10, 1979 letter. This fee determination is limited to items which are being reviewed as part of our request to implement the requirements of 10 CFR 50.55a. Any other unrelated changes or requests that you might choose to include at this time would be subject to amendment fees in accordance with 10 CFR 170.22.

Copies of the Safety Evaluation and the Notice of Issuance are also enclosed.

Sincerely,



A. Schwencer, Chief  
Operating Reactors Branch #1  
Division of Operating Reactors

Enclosures:

1. Amendment No. 22 to DPR-66
2. Safety Evaluation
3. Notice of Issuance

cc: w/enclosures  
See next page

Mr. C. N. Dunn  
Duquesne Light Company

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December 4, 1979

cc: Gerald Charnoff, Esquire  
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Westinghouse Electric Corporation  
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B. F. Jones Memorial Library  
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Mr. Jack Carey  
Technical Assistant  
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Post Office Box 2963  
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Mr. Thomas J. Czerpah  
Mayor of the Borough of  
Shippingport  
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Shippingport, Pennsylvania 15077

Ohio Edison Company  
c/o Chief Nuclear QA Engineer  
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Akron, Ohio 44308

Pennsylvania Power Company  
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Ohio Environmental Protection Agency  
Division of Planning  
Environmental Assessment Section  
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Columbus, Ohio 43216

Office of the Governor  
State of West Virginia  
Charleston, West Virginia 25305

Mr. Carl Frasure  
Committee of State Officials on  
Suggested State Legislation  
Department of Political Science  
West Virginia University  
Morgantown, West Virginia 26505

Mr. C. N. Dunn  
Duquesne Light Company

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December 4, 1979

cc: Mr. Joseph H. Mills, Acting Commissioner  
State of West Virginia Department  
of Labor  
1900 Washington Street  
East Charleston, West Virginia 25305

N. H. Dyer, M.D.  
State Director of Health  
State Department of Health  
State Office Building No. 1  
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Charleston, West Virginia 25305

Director, Technical Assessment Division  
Office of Radiation programs (AW-459)  
U. S. Environmental Protection Agency  
Crystal Mall #2  
Arlington, Virginia 20460

U. S. Environmental Protection Agency  
Region III Office  
ATTN: EIS COORDINATOR  
Curtis Building - 6th Floor  
Philadelphia, Pennsylvania 19106

Governor's Office of State Planning  
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ATTN: Coordinator, Pennsylvania  
State Clearinghouse  
P. O. Box 1323  
Harrisburg, Pennsylvania 17120

Mr. John A. Levin  
Public Utility Commission  
P. O. Box 3265  
Harrisburg, Pennsylvania 17120



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20545

DUQUESNE LIGHT COMPANY

OHIO EDISON COMPANY

PENNSYLVANIA POWER COMPANY

DOCKET NO. 50-334

BEAVER VALLEY POWER STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 22  
License No. DPR-66

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Duquesne Light Company, Ohio Edison Company, and Pennsylvania Power Company (the licensees) dated October 28, 1976, as supplemented October 10, 1977, June 12, 1978, July 24, 1978 and August 10, 1979, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

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2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR-66 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 22, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



A. Schwencer, Chief  
Operating Reactors Branch #1  
Division of Operating Reactors

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: December 4, 1979

ATTACHMENT TO LICENSE AMENDMENT NO. 22

FACILITY OPERATING LICENSE NO. DPR-66

DOCKET NO. 50-334

Replace the following pages of the Appendix "A" Technical Specifications with the enclosed pages. The revised pages are identified by Amendment number and contain vertical lines indicating the area of change. The corresponding overleaf pages are also provided to maintain document completeness.

Pages

1-7

3/4 0-2

3/4 0-3 (added)

B 3/4 0-3 (added)

TABLE 1.2  
FREQUENCY NOTATION

<u>NOTATION</u>	<u>FREQUENCY</u>
S	At least once per 12 hours.
D	At least once per 24 hours.
W	At least once per 7 days.
M	At least once per 31 days
Q	At least once per 92 days.
SA	At least once per 184 days.
R	At least once per 18 months.
S/U	Prior to each reactor startup.
N.A.	Not applicable.

### 3/4 LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

#### 3/4.0 APPLICABILITY

##### LIMITING CONDITION FOR OPERATION

3.0.1 Limiting Conditions for Operation and ACTION requirements shall be applicable during the OPERATIONAL MODES or other conditions specified for each specification.

3.0.2 Adherence to the requirements of the Limiting Condition for Operation and/or associated ACTION within the specified time interval shall constitute compliance with the specification. In the event the Limiting Condition for Operation is restored prior to expiration of the specified time interval, completion of the ACTION statement is not required.

3.0.3 In the event a Limiting Condition for Operation and/or associated ACTION requirements cannot be satisfied because of circumstances in excess of those addressed in the specification, the facility shall be placed in at least HOT STANDBY within 1 hour and in COLD SHUTDOWN within the following 30 hours unless corrective measures are completed that permit operation under the permissible ACTION statements for the specified time interval as measured from initial discovery. Exceptions to these requirements shall be stated in the individual specifications.

3.0.4 Entry into an OPERATIONAL MODE or other specified applicability condition shall not be made unless the conditions of the Limiting Condition for Operation are met without reliance on provisions contained in the ACTION statements unless otherwise excepted. This provision shall not prevent passage through OPERATIONAL MODES as required to comply with ACTION statements.

##### SURVEILLANCE REQUIREMENTS

4.0.1 Surveillance Requirements shall be applicable during the OPERATIONAL MODES or other conditions specified for individual Limiting Conditions for Operation unless otherwise stated in an individual Surveillance Requirement.

4.0.2 Each Surveillance Requirement shall be performed within the specified time interval with:

- a. A maximum allowable extension not to exceed 25% of the surveillance interval, and

APPLICABILITY

SURVEILLANCE REQUIREMENTS (Continued)

- b. A total maximum combined interval time for any 3 consecutive surveillance intervals not to exceed 3.25 times the specified surveillance interval.

4.0.3 Performance of a Surveillance Requirement within the specified time interval shall constitute compliance with OPERABILITY requirements for a Limiting Condition for Operation and associated ACTION statements unless otherwise required by the specification.

4.0.4 Entry into an OPERATIONAL MODE or other specified applicability condition shall not be made unless the Surveillance Requirement(s) associated with the Limiting Condition for Operation have been performed within the stated surveillance interval or as otherwise specified.

The provisions of Specification 4.0.4 are not applicable to the performance of surveillance activities associated with fire protection technical specifications 4.7.14 and 4.7.15 until the completion of the initial surveillance interval associated with each specification.

4.0.5 Surveillance Requirements for inservice inspection and testing of ASME Code Class 1, 2 and 3 components shall be applicable as follows:

- a. Inservice inspection of ASME Code Class 1, 2 and 3 components and inservice testing of ASME Code Class 1, 2 and 3 pumps and valves shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda as required by 10 CFR 50, Section 50.55a(g), except where specific written relief has been granted by the Commission pursuant to 10 CFR 50, Section 50.55a(g)(6)(i).
- b. Surveillance intervals specified in Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda for the inservice inspection and testing activities required by the ASME Boiler and Pressure Vessel Code and applicable Addenda shall be applicable as follows in these Technical Specifications:

ASME Boiler and Pressure  
Vessel Code and applicable  
Addenda terminology for  
inservice inspection and  
testing activities

Required frequencies  
for performing inservice  
inspection and testing  
activities

Weekly  
Monthly  
Quarterly or every 3 months  
Semiannually or every 6 months  
Yearly or annually

At least once per 7 days  
At least once per 31 days  
At least once per 92 days  
At least once per 184 days  
At least once per 366 days

APPLICABILITY

SURVEILLANCE REQUIREMENTS (Continued)

- c. The provisions of Specification 4.0.2 are applicable to the above required frequencies for performing inservice inspection and testing activities.
- d. Performance of the above inservice inspection and testing activities shall be in addition to other specified Surveillance Requirements.
- e. Nothing in the ASME Boiler and Pressure Vessel Code Shall be construed to supersede the requirements of any Technical Specification.

## APPLICABILITY

### BASES

4.0.5 This specification ensures that inservice inspection of ASME Code Class 1, 2, and 3 components and inservice testing of ASME Code Class 1, 2 and 3 pumps and valves will be performed in accordance with a periodically updated version of Section XI of the ASME Boiler and Pressure Vessel Code and Addenda as required by 10 CFR 50.55a. Relief from any of the above requirements has been provided in writing by the Commission and is not a part of these Technical Specifications.

This specification includes a clarification of the frequencies for performing the inservice inspection and testing activities required by Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda. This clarification is provided to ensure consistency in surveillance intervals throughout these Technical Specifications and to remove any ambiguities relative to the frequencies for performing the required inservice inspection and testing activities.

Under the terms of this specification, the more restrictive requirements of the Technical Specifications take precedence over the ASME Boiler and Pressure Vessel Code and applicable Addenda. For example, the requirements of Specification 4.0.4 to perform surveillance activities prior to entry into an OPERATIONAL MODE or other specified applicability condition takes precedence over the ASME Boiler and Pressure Vessel Code provision which allows pumps to be tested up to one week after return to normal operation and for example, the Technical Specification definition of OPERABLE does not grant a grace period before a device that is not capable of performing its specified functions is declared inoperable and takes precedence over the ASME Boiler and Pressure Vessel Code provision which allows a valve to be incapable of performing its specified function for up to 24 hours before being declared inoperable.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
SUPPORTING AMENDMENT NO. 22 TO FACILITY OPERATING LICENSE NO. DPR-66

DUQUESNE LIGHT COMPANY

OHIO EDISON COMPANY

PENNSYLVANIA POWER COMPANY

BEAVER VALLEY POWER STATION, UNIT NO. 1

DOCKET NO. 50-334

As required by 10 CFR 50.55a(g), Duquesne Light Company has updated the Inservice Inspection and Testing Program for the Beaver Valley Unit 1 facility to the requirements of the 1974 Edition through summer 1975 Addenda of Section XI ASME Boiler and Pressure Vessel Code. Based on the information submitted by letters dated October 28, 1976, October 10, 1977, June 12, 1978, July 24, 1978 and August 10, 1979 and our review of this information, it has been determined that certain requirements of the Code cannot be implemented because of component or system design, geometry, or materials of construction of the facility. Requested relief from those requirements have been evaluated and our determinations to grant or deny the requests are documented below. These examination reliefs and required alternatives are summarized in Table 1 of the Safety Evaluation Report.

I. INSERVICE INSPECTION

A. Class 1 Components

1. Request relief from examination of the Lower Head Ring to Peel Segment Circumferential Weld, Lower Head Peel Segment Meridional Welds, Lower Head Peel Segment to Disc Circumferential Weld, Closure Head Peel Segment to Disc Circumferential Weld. (Item B1.2, Examination Category B-B.)

Code Requirement

Volumetric examination of the shell longitudinal and circumferential welds. Examination shall cover at least 10%

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of the length of each longitudinal weld and 5% of the length of each circumferential weld during the inspection interval. Examinations may be performed at or near the end of the inspection interval.

#### Licensee Basis for Requesting Relief

The examination of the welds in the bottom head is restricted from inside the vessel by the locations of the adjacent incore instrumentation penetrations. Examinations of those areas accessible between the penetrations and conduits will be performed from the outside surface to the extent practical as allowed by radiation levels. The closure head peel segment to disc weld is completely enclosed within the pattern of CRDM penetrations inside the shroud and is not accessible for examination as required by IWB-2600.

The general area radiation levels are expected to be 100 to 200 mr/hr and 400 to 500 mr/hr contact on the vessel shell. Examinations will not be performed if the examiner must receive a whole body dose in excess of 1250 mr in order to complete any one examination.

#### Evaluation

The design of the lower and closure heads of the reactor vessel prevents examination, to the extent required by the Code, of the welds for which relief is requested. The licensee has stated that examination of those accessible areas between the incore instrumentation penetrations and conduits will be performed to the extent practical provided radiation levels permit such examinations. As an alternate examination of the lower head welds, the licensee has proposed to examine 60% of one meridional weld and 5% of the adjacent portions of each circumferential weld. The staff has determined that the alternate examination proposed by the licensee and a visual examination of the welds during pressure tests will provide an acceptable level of safety and assurance of the structural integrity of these welds. We conclude that relief from the Code requirement may be granted for this examination.

2. Request relief from volumetric examination of the inner nozzle-to-vessel radiused section on the steam generator and pressurizer nozzles. (Items B2.2 and B3.2, Examination Category B-D)

Code Requirement

The extent of examination of each nozzle shall cover 100% of the volume to be inspected as shown in Figure IWB-2500D. All nozzles shall be examined during each inspection interval.

Licensee Basis for Requesting Relief

The steam generator and pressurizer nozzles are integrally cast with the vessel heads and therefore contain no nozzle-to-vessel welds. Due to the rough as-cast surface, geometric configuration, and radiation levels in the area, volumetric examination results will be limited.

Evaluation

The licensee has agreed to attempt to examine the nozzle-to-vessel radiused sections in accordance with the Code requirements. However, the design and materials of construction are expected to limit the results of the examinations. Because of the integrally cast fabrication of these components, it is the staff's judgment that the areas required to be examined are not likely to be susceptible to inservice flaw initiation and that a visual examination of the radiused sections will provide adequate assurance of the structural integrity of these components. We, therefore, conclude that relief from the Code requirement may be granted provided a visual examination is performed.

3. Request relief from 100% volumetric examination of steam generator nozzle safe-end-to-pipe welds from the nozzle side. (Item B4.1, Examination Category B-F)

Code Requirement

Volumetric and surface examination of all safe-ends during each inspection interval.

### Licensee Basis for Requesting Relief

The arrangements and details of the piping systems and components are such that some examinations as required by IWB-2600 are limited due to geometric configuration or accessibility. Examination of the steam generator primary nozzle safe-end pipe welds is limited both by the nozzle geometry and surface condition and the limited surface preparation on the pipe side of the weld. The surface on the pipe side of the weld, which is a cast elbow, is machined for a distance of approximately 3 inches from the surface edge of the weld. Examinations can be performed on the surface of the weld but are severely limited from the nozzle side by the rough, as-cast surface. Surface examinations can be performed on 100% of the weld and the base metal on the pipe side.

### Evaluation

Because of the geometric configuration and lack of surface preparation of the areas around these welds, it is considered impossible to obtain meaningful results on 100% of the volumes required to be examined by the Code. The licensee has proposed to examine the required volumes to the extent practical and to perform the surface examination in accordance with the Code requirements. The staff has determined that the proposed examination will cover a sufficient percentage of the required volume to provide assurance that unacceptable flaws do not exist and the 100% surface examination will provide further assurance of the structural integrity of the safe end-to-pipe welds. We conclude that relief from the Code requirements may be granted as requested.

4. Request relief from 100% volumetric examination of the following piping welds: (Item B4.5, Examination Category B-J)
  - (a) Loop 1 Cold Leg Low Head SIS; Weld No. 7
  - (b) Loop 1 R.T.D. Return Line; Weld No. 12
  - (c) Loop 2 Accumulator Discharge Line; Weld No. 1
  - (d) Loop 2 R.T.D. Return Line; Weld No. 12

- (e) Loop 3 Accumulator Discharge Line; Weld No. 1
- (f) Loop 3 R.T.D. Return Line; Weld No. 12
- (g) Pressurizer Relief Line; Weld No. 22
- (h) Loop 3 Pressurizer Spray Line; Weld No. 33
- (i) Longitudinal welds in the primary coolant loop which are fabricated from two halves of austenitic stainless steel castings and welded together by the electroslag process.
- (j) Loop 1 Hot Leg Low Head SIS; Weld No. 18
- (k) Loop 2 Accumulator Discharge Line; Weld No. 9
- (l) Loop 2 Cold Leg Low Head SIS; Weld No. 15
- (m) Loop 3 Accumulator Discharge Line; Weld Nos. 12 and 17
- (n) Loop 3 Hot Leg Low Head SIS; Weld No. 9
- (o) Pressurizer Relief Line; Weld No. 11
- (p) Loop 1 Pressurizer Spray Line; Weld Nos. 6 and 10
- (q) Loop 3 Pressurizer Spray Line; Weld No. 36
- (r) Pressurizer Safety Valve Lines; Weld Nos. 8, 17 and 26

Code Requirement

Volumetric examination of all of the area of 25% of the circumferential joints including the adjoining one-foot sections of longitudinal joints and 25% of the pipe branch connection joints during the inspection interval.

Licensee Basis for Requesting Relief

Limitations may occur for the volumetric examination of piping system circumferential butt welds (Category B-J) when the welds occur at geometric discontinuities such as

pipe-to-vessel welds, pipe-to-fitting or fitting-to-fitting welds. For pipe-to-fitting welds or pipe-to-vessel nozzle welds, volumetric examinations can be performed to the extent required by T-532 of Section V from the weld and pipe surfaces. Volumetric examination from the fitting side would be dependent upon the geometric configuration. Where elbows or tees are concerned, volumetric examination can be performed from the fitting side except where the intrados of the fitting prevents adequate ultrasonic coupling. No volumetric examinations can be performed from the fitting side when it is a valve or a flange. In all cases 100% of the weld material can be examined. In instances where welds occur at fitting-to-fitting, access restrictions as outlined above occur on both sides of the weld. In instances where ultrasonic examinations cannot be performed on 100% of the volume of the weld and heat affected zones, surface examinations will be performed to supplement the limited volumetric examination.

The 90-degree elbows in the crossover leg of the reactor coolant system are fabricated in two halves from austenitic stainless steel castings welded together by the electroslag process. The structure of the material is such that ultrasonic examinations cannot be performed as required by IWB-2600. These welds will be subjected to a surface examination and a visual examination during system pressure tests.

In instances where the locations of pipe supports or hangers restrict the access for the volumetric examinations of pipe welds, examinations will be performed to the extent practical unless removal of the support is permissible without unduly stressing the system. These welds will be supplemented with a surface examination.

For those reactor coolant pipe welds which will be examined utilizing refracted longitudinal ultrasonic techniques or a technique which utilizes only a 1/2 node calibration, a surface examination will also be performed on the outside surface of the welds.

### Evaluation

The design of the reactor coolant loops and the materials from which portions of the loops were fabricated restrict full compliance with the examination requirements of the Code. The licensee has proposed to volumetrically examine the welds to the extent practical and supplement the limited volumetric examination with a surface examination. The staff finds the combination of examinations proposed by the licensee acceptable in providing assurance of the structural integrity of the welds listed and conclude that relief from 100% volumetric examination may be granted.

5. Request relief from 100% volumetric examination of the reactor coolant system branch nozzle connection welds. (Item B4.6, Category B-J)

### Code Requirement

Volumetric examination of all of the area of 25% of the circumferential joints including the adjoining one-foot section of longitudinal joints and 25% of the pipe branch connection joints during the inspection interval.

### Licensee Basis for Requesting Relief

The configuration of the reactor coolant branch nozzle welds prevents the conduct of meaningful UT examination.

### Evaluation

The design of the pipe branch connections prevents 100% volumetric examination of the welds and heat affected zones. Practical alternative techniques to volumetrically examine the entire areas of these welds which would produce meaningful results are not presently available. The licensee has proposed to volumetrically examine portions of the welds on which meaningful results can be obtained and to use 100% surface examination on these welds. The staff finds the proposed combination of examinations acceptable in providing assurance of the structural integrity of the piping branch connections and concludes that relief from the 100% volumetric examination requirement may be granted.

6. Request relief from volumetric examination of integrally-welded pipe supports. (Item B4.9, Examination Category B-16-1)

Code Requirement

Volumetric examination of 25% of the integrally-welded supports during each inspection interval.

Licensee Basis for Requesting Relief

These welds are fillet welds by design. Volumetric examination of this type of weld by ultrasonic testing method would not produce meaningful results.

Evaluation

Because of the weld design, ultrasonic examination is an impractical technique to use.

Radiographic examination of these welds would be difficult to perform and interpret, and would therefore result in little added assurance of safety. The licensee has committed to subject these welds to surface examination and to volumetrically examine the base metal. Based on the loading conditions of these types of welds, flaws would most likely generate at the weld surface and thus be detectable by surface examination. Ultrasonic examination of the base metal would provide assurance that flaws in the base metal do not exist. The examination techniques to be employed by the licensee are therefore considered acceptable in providing assurance that the pipe supports integrity will be maintained during the inspection period.

7. Request to delay volumetric examination of the reactor coolant pump seal housing bolts until the end of the 10-year inspection interval. (Item B5.1, Inspection Category B-G-1)

Code Requirement

Volumetric examination of 100% of bolts while in place of volumetric and surface examination of 100% of bolts when removed. To be completed by the end of the inspection interval.

### Licensee Basis for Requesting Relief

The reactor coolant pump seal housing bolts are of the socket head type and the configuration is such that ultrasonic examinations as required by IWB-2600 cannot be performed when the bolting is in place. Examinations will only be performed when the seal housing is disassembled at the end of the inspection interval.

### Evaluation

The design of the seal housing bolts prevents ultrasonic examination and radiography is an impractical technique to use with the bolting in place. To disassemble a reactor coolant pump at the frequency required in order to perform the examination would place an undue burden on the licensee without providing a comparable increase in the level of safety of the facility. System leakage monitoring is presently performed and will provide some assurance of the condition of the seal housing bolts. We therefore conclude that the safety of the facility is not significantly decreased by delaying the required examination to the end of the inspection interval and that relief from the requirement may be granted for this inspection period. In the event that a pump is disassembled for maintenance prior to the end of the interval, the Code required examination shall be performed at that time.

8. Request relief from volumetric examination of pump casing welds if radiography cannot be performed. (Item B5.6, Examination Category B-L-1)

### Code Requirement

Volumetric examination of 100% of pressure retaining welds in one pump of each group during the interval. The examination may be performed at or near the end of the inspection interval.

### Licensee Basis for Requesting Relief

Volumetric examinations as required by IWB-2600 will be attempted utilizing radiographic techniques. The success of these examinations will be dependent upon the availability of high energy gamma sources and the level of background radiation. Internal fittings in the pump may also provide restriction to the extent of examination that can be performed.

### Evaluation

The required volumetric examination by radiography has not been determined to be impractical at this time. In the event that this determination is made and the licensee submits to the Commission supporting information of his determinations, the staff will evaluate the information and issue its findings at that time.

9. Request relief from performing surface examination on the bolting for the reactor coolant pump main flange and loop stop valve bonnet bolting until the end of the 10-year interval when the pump or valve is disassembled. (Items B5.1 and B6.1, Examination Category B-G-1)

### Code Requirement

The bolts shall be examined 100% by volumetric and surface methods during each inspection interval. The bolting may be volumetrically examined either in place under tension, when the connection is disassembled, or when the bolting is removed. The bolting shall be surface examined when removed.

### Licensee Basis for Requesting Relief

The bolting will only be removed at the end of the 10-year interval when the pump or valve is disassembled for the performance of the required casing and weld examinations.

### Evaluation

The performance of the required volumetric examination at the specified frequencies and the performance of a surface examination when the bolting is removed is in compliance with Code requirements. Therefore, relief from the requirements is not necessary.

### B. Class 2 Components

1. Request relief from performing volumetric examination in full compliance with Section XI on those items where scanning

using ultrasonics is either not possible or not practical due to geometric configuration or accessibility of the welds.

Code Requirement

Categories C-F and C-G require examination of 100% of the welds selected by volumetric techniques.

Licensee Basis for Requesting Relief

Examinations of Class 2 piping system welds occurring at geometric discontinuities is limited and some limitations may be expected at all locations. For pipe-to-fitting or pipe-to-vessel nozzle welds, examinations can be performed to the extent required by T-523 of Section V from the weld and pipe surfaces.

Meaningful examination from the fitting side would depend upon the geometric configuration. Where elbows or tees are concerned, examination can be performed from the fitting side except where the intrados of the fitting prevents adequate ultrasonic coupling. No examinations can be performed from the fitting side when it is a valve or a flange. In all cases 100% of the weld material can be examined. In instances where welds occur at fitting-to-fitting, access restrictions as outlined above occur on both sides of the weld. In instances where ultrasonic examinations cannot be performed on 100% of the volume of the weld and heat affected zone, surface examinations will be performed to supplement the limited volumetric examination.

Preservice examinations were not conducted on the welds in Class 2 systems in the Beaver Valley Unit 1 plant and the following listing of welds are those where it is expected that supplemental surface examinations would be required:

Loop 1 Main Steam	ISO#DLW 2-2110	Weld #17
Loop 2 Main Steam	ISO#DLW 2-2111	Weld #17
Loop 3 Main Steam	ISO#DLW 2-2112	Weld #17
RHR System	ISO#DLW 2-2310	Welds #18, 19, 20, 40, 41, 42, 68 & 77
RHR System	ISO#DLW 2-2311	Welds #2, 8, 23 & 26
RHR System	ISO#DLW 2-2312	Welds #6 & 26
Charging Pump Suction	ISO#DLW 2-2410	Welds #4, 16, 22, 34, 40, 52 & 73

The code does not require that all welds in multiple streams be examined and consequently not all the welds listed above will be included in the inspection program.

#### Evaluation

The design of the Class 2 piping system and the geometric configurations existing at fittings and nozzles prevent full compliance with volumetric examination requirements of the Code. The licensee has proposed volumetric examination in accordance with the Code to the extent that meaningful results are obtained and to perform a surface examination to supplement or complete 100% of the required areas to be examined. The staff finds the combination of examination methods acceptable in providing assurance of the structural integrity of the welds and heat affected zones of the systems listed. We conclude that the proposed combination of examination methods will provide an adequate level of assurance of the safety of these systems and that relief from the Code requirement, as requested, may be granted.

2. Request relief from the 100% volumetric examination requirement of the Regenerative Heat Exchanger shell-to-tube sheet welds and request to examine 10% of the total of one head-to-shell weld and 10% of one shell-to-tube sheet weld on the Regenerative Heat Exchanger during each 40-month period. (Item C1.1, Examination Category C-A)

#### Code Requirement

Volumetric examination of at least 20% of each circumferential weld, uniformly distributed among three areas around vessel circumference over the service lifetime of the component.

#### Licensee Basis for Requesting Relief

The location of support members on the regenerative heat exchanger may prevent ultrasonic examinations being performed to the extent required by IWC-2600. Examinations will be performed to the extent practical unless support components can be removed to provide additional access.

The regenerative heat exchanger is a three pass vessel, having a total of six head-to-shell welds and six shell-to-tubesheet welds. In view of the high radiation levels generally associated with this vessel, it is proposed that examinations be limited to 10% of the total of one head-to-shell weld and 10% of one shell-to-tubesheet weld during each 40-month period rather than a much smaller percentage of each of 12 welds.

#### Evaluation

The design of the supports on the regenerative heat exchanger prevents ultrasonic examination of the shell-to-tubesheet welds to the extent required by the Code. Radiography is an impractical examination method. The licensee has proposed to use surface and visual examination in lieu of the required volumetric on areas which are inaccessible for ultrasonic examination. Because of the design and conditions to which these welds are subjected, surface flaws are most likely to be generated and the surface and visual examination as proposed by the licensee is an acceptable examination technique for detection of such flaws.

Because of the relatively high radiation levels in the areas of examination and the small percentage of each head-to-shell and shell-to-tubesheet weld to be examined to the Code requirement, the staff finds that the requirement is impractical and will not provide a significant increase in assurance of the heat exchanger's structural integrity over the examination proposed by the licensee. We therefore conclude that the examination of 10% of one weld each 40-month period as proposed by the licensee exceeds code requirements and provides adequate assurance of the heat exchanger's structural integrity. Relief from the Code requirement as requested may be granted.

3. Request relief from volumetric examination of nozzle-to-vessel welds on the residual heat exchanger. (Item C1.2, Examination Category C-B)

#### Code Requirement

Volumetric examination of 100% of the nozzle-to-vessel attachment weld over the service lifetime of the component.

### Licensee Basis for Requesting Relief

The residual heat removal heat exchanger nozzle-to-vessel weld are covered by a reinforcement ring and are not accessible for examination as required by IWC-2600.

### Evaluation

Because of the reinforcement ring required in the design at openings in the component shell, the nozzle-to-vessel weld is completely inaccessible for volumetric or surface examination. Disassembly of the component to perform the required examination is impractical during refueling outages because of the importance of the heat exchanger's function at that time. The staff recommends that relief from the examination requirements to be granted provided the nozzle and reinforcement ring areas are visually inspected during the inspection period. In the event the residual heat removal heat exchanger is disassembled for maintenance and the welds are accessible for examination from the inside surface, the Code required examination shall be performed.

We conclude that the recommended visual inspection will provide adequate assurance that the vessel shell integrity at the nozzle location is maintained during the inspection period.

4. Request relief from volumetric examination required by IWC-2600 for the following:

Seal Water Return Filter: cover-to-shell and head-to-shell welds, and integrally-welded supports

Seal Water Injection Filter: head-to-shell and shell-to-tubesheet welds and integrally-welded supports

Reactor Coolant Filter: cover-to-shell and head-to-shell welds and integrally-welded supports. (Items C1.1 and C1.3, Examination Category C-A and C-C)

Seal Water Injection Filters: Pressure Retaining Bolting (Item C1.4, Examination Category C-D)

Code Requirement

Volumetric examination of at least 20% of each circumferential weld, uniformly distributed among three areas around the vessel circumference over the service lifetime of the component. Visual and either surface or volumetric examination of pressure retaining bolting.

Licensee Basis for Requesting Relief

The filters will have to be removed to allow the required examination to be performed. With the filters in place, the expected levels of radiation would be 6-10 R/hr. The removal of the filters exposes station operational and maintenance personnel to substantial whole body doses (300-500 mr/man). Approximately 0.75 man-hour is needed to perform examinations on one complete filter and based on an exposure rate of 500 mr/hr following cartridge removal, examination of one filter would involve 375 man-rem exposure. Additional exposure would be associated with insulation removal and replacement.

In view of the above problems associated with high radiation exposure to personnel and the very limited requirement for extent of examination, relief is requested from performing any examination on the CVCS filters other than visual for evidence of leakage during system pressure tests. As further justification for deleting any NDE requirement on these components it should be noted that the complete piping system in which they are contained, being 4 inch diameter or less, is exempt from any examination requirement of IWC-2520 by IWC-1220 (d).

Evaluation

The licensee has stated that these filters are changed when needed, based on measured differential pressures. The expected frequency of filter change is:

Seal Water Return Filter (once/3-4 years)

Seal Water Injection Filters (once/3-4 years)

Reactor Coolant Filter (once or twice/year)

An examination of the welds can be performed at essentially the frequency required by the Code. The staff recognizes the radiation exposure problem in performing the required volumetric examination and recommend a surface examination be substituted for the volumetric examination. The surface examination will reduce the exposure time to personnel by about one-half as well as provide assurance of the structural adequacy of the vessels, bolts, and supports and the condition of the connecting pipes. We find that relief from the volumetric examination as required by the Code may be granted. Pressure retaining bolting may be either volumetric or surface examined, therefore, surface examination as described above will meet the requirements of the Code.

5. Request relief from volumetric examination requirement for the shell-to-flange weld and head-to-shell weld of the seal water heat exchanger. (Item C1.1, Examination Category C-A)

#### Code Requirement

Volumetric examination shall cover at least 20% of each shell and head circumferential weld uniformly distributed among three areas around the vessel circumference to be performed over the service lifetime.

#### Licensee Basis for Requesting Relief

The thickness of the materials utilized for the construction of this component (0.165 to 0.185 inches) is such that meaningful results could not be expected with ultrasonic examination as required by IWC-2600. The problems associated with the ultrasonic examination of thin wall materials has been recognized by Section XI of the Code and the requirement in subsequent addenda and editions (Winter 75 for Class 1 and Summer 76 for Class 2) revised to require surface examination of welds in components with wall thicknesses of 1/2-inch and less. Surface and visual examination of these welds will be performed as an alternative method.

#### Evaluation

The thickness of the material as well as the Code requirement to examine less than one-inch of length of each weld makes

volumetric examination an impractical examination method. Surface and visual examination as proposed by the licensee are adequate examination methods for the welds and base metal since flaws would most likely appear at the surface. The staff concludes that the proposed alternative examinations will provide an acceptable level of quality and safety and therefore relief from the volumetric examination requirement may be granted.

5. Request to conduct the required examinations on the charging pump casing welds when the pump is disassembled. (Item C3.1, Inspection Category C-F)

Code Requirement

Volumetric examination of 100% of the weld over the service lifetime.

Licensee Basis for Requesting Relief

Examination of the charging pump casing weld by ultrasonic, radiographic or surface examination requires complete disassembly of the pump casing and removal of the inboard seal housing and rotor assembly. It is requested that ultrasonic examination be conducted whenever a pump is disassembled for maintenance reasons.

Evaluation

To disassemble the charging pump in order to perform the required examination at the frequency specified in the Code is impractical. Conduct of the examinations at the end of each inspection interval, which the licensee has agreed to if a pump is not disassembled prior to the end of the inspection interval, meets the intent of IWC-2411 and is therefore acceptable. The staff finds that relief from the examination frequency will not significantly decrease the plant's operational safety and concludes that relief from the examination frequency requirement, as requested, may be granted.

7. Augmented Inspection Requirements

Portions of Class 2 systems and components are exempt from the examination requirements of IWC-2520 by IWC-1220. These systems and components are listed below:

- (a) CVCS Piping equal to or less than 4-inch nominal diameter is exempted by IWC-1220 (d).
- (b) The Boron Injection System piping is equal to or less than 4-inch nominal diameter and exempted by IWC-1220 (d).
- (c) During plant operation, the boric acid solution will be constantly recirculated through the boron injection tank by the transfer pump system. Samples would normally be taken on a regular basis and the component exempt from examination by IWC-1220 (c).
- (d) During plant operation, the contents of the SIS accumulators are normally sampled on a regular basis and this component and associated piping would also be exempted by IWC-1220 (c).
- (e) The high head SIS piping is equal to or less than 4-inch nominal diameter and exempted by IWC-1220 (d).
- (f) During plant operation, the high head SIS injection pumps are run on a periodic basis to recirculate flow to and from the RWST. Samples taken on a regular basis from the RWST would verify the chemistry of the system fluid and exemption from examination would again be by IWC-1220 (c).
- (g) The containment spray system does not function during normal reactor operation and is exempted by IWC-1220 (b).

On June 27, 1979, we requested the licensee to submit an augmented inspection program for the systems discussed in items (c), (d), (f), and (g) above and justification for any proposed exemptions. These items perform an "Emergency Core Cooling" function, and as shown above are exempt from inspection as provided in paragraph IWC 1220 (c) of the ASME B&PV Code Section XI, 1974 Edition, including the Summer 1975 Addenda.

The examination requirements of IWC shall apply, including inspection of supports, when the systems maximum operating pressure and temperature are greater than 275 psig and 200°F, respectively, and the component connections, piping, associated valves, and vessels (and their supports) are greater than 4-inch nominal pipe size.

The examination frequency and method shall be as described in the "Requirements for Class 2 Components," Subsection IWC, Section XI, 1974 Edition, including the Summer 1975 Addenda.

The bases for requiring these systems to be inspected are:

- (a) The systems are necessary for safe shutdown of the reactor in the event of an accident;
- (b) No technical justification exists for exemption from the examination requirements based on chemistry sampling, and
- (c) Examination of the systems in accordance with IWC-2520 provides assurance of the structural integrity of these systems which are vital safeguards for plant and public safety.

On August 10, 1979, the licensee committed to an augmented inspection program for these systems. Although no exemptions were requested, the licensee stated that any request for exemption would be made by the end of the Fall 1979 refueling. We find this acceptable.

### C. System Pressure Tests

1. Request relief from testing and portions of the systems listed below:
  - (a) R.C. pump seal bypass line from check valves 191, 192 and 193 to MO valve 307.
  - (b) R.C. pump leak off line to manually operated valves 211, 212 and 213, 202, 205, 206, 346, 347 and 348.
  - (c) R.C. pump seal injection line from check valve 181, 182 and 183 to MOV 308 A, B and C.
  - (d) Excess letdown from valve 201 to HCV 137.
  - (e) Letdown line from valve LCV 460B to orifice outlet valves 200 A, B and C.
  - (f) Pressurizer steam space sampling line from valve 64 to 65, pressurizer liquid space sampling line from valve 545F to SS108, and loop sampling lines from valves 1, 8, 6, and 10 to valves SS106 A, B, C, and D.

Code Requirement

The pressure retaining components shall be subjected to a hydrostatic test at 1.25 times the system design pressure at 100°F at least once toward the end of each inspection interval.

Licensee Basis for Requesting Relief

Subsections IWB and IWC contain differing requirements for the hydrostatic testing of Class 1 and Class 2 systems and components. The implementation of these requirements is impractical when the only means of pressurizing the Class 2 system is through the Class 1 system or when the boundary between the two systems is a check valve arranged for flow from Class 2 to Class 1 systems. Exception is taken to the performance of the hydrostatic test requirements as required by Article IWC-2412 (a) on those portions of the Class 2 systems identified above.

Evaluation

Each of the listed portions of the Class 2 systems has a design pressure of 2485 psig. The operating pressure of the reactor coolant system is 2235 psig. To meet the requirements of IWC-5220 (a), each line would have to be tested at a pressure of  $1.05 \times 2485$  at 500°F, i.e., 2609 psig. To meet the requirements of IWB-5221, the lines would require testing at  $1.02 \times 2235$  at 500°F, i.e., 2280 psig. The six portions of systems involved either cannot be isolated from the Class 1 systems or can only be pressurized through the Class 1 systems. The licensee has agreed to conduct visual examinations for evidence of leakage on these portions of the above systems at the system nominal operating pressure in accordance with the requirements of IWB-5221 for the adjoining Class 1 system.

In addition, the staff recommends that in those areas where it is possible to pressurize the Class 2 system in conjunction with the Class 1 system that a visual examination of these systems be performed during the Class 1 system hydrostatic test.

We conclude that this procedure is acceptable in providing evidence of leakage.

2. Request relief from the requirement of a visual examination of Class 1 systems and components listed below for evidence of leakage during the system pressure test following each refueling.

Cold leg injection from accumulators between check valves 48, 49, 50, 51, 52 and 53, test lines to valves 850 B, D and F and RHR return lines to valves 720 A and B.

Hot leg low head injection between check valves 20, 21 and 22 and 15, 16 and 17 and high head injection to check valves 83 and 84.

Cold leg low head injection between check valves 23, 24 and 25 and 10, 11 and 12 and boron injection to check valves 100, 101 and 102.

RHR take-off line between normally closed (with pressure interlock) valves 700 and 701.

#### Code Requirement

The pressure retaining components shall be subjected to a hydrostatic test at 1.10 times the system operating pressure at least once toward the end of each inspection interval and a leakage test at operating pressure following each outage.

#### Licensee Basis for Requesting Relief

During normal plant operation the portion of the cold leg injection from accumulators between check valves 48, 49, 50, 51, 52 and 53, test lines to valves 850 B, D and F and RHR return lines to valves 720 A and B is pressurized to the normal accumulator operating pressure of 585 to 681 psig.

The portions of the hot leg low head injection between check valves 20, 21, 22 and 15, 16 and 17 and high head injection to check valves 83 and 84 are filled and vented but not pressurized during normal operation. This portion of the system can be pressurized by diverting charging pump discharge flow through the high head safety injection path by opening motor operated valve 869 A or B.

The portions of the cold leg low head injection between check valves 23, 24 and 25 and 10, 11 and 12 and boron injection to check valves 100, 101 and 102 are filled and vented but not pressurized during normal operation. This portion of the system can be pressurized by diverting charging pump discharge flow through the high head safety injection path by opening valve 836.

The portions of the RHR take-off line between normally closed valves 700 and 701 will be pressurized whenever the system is put into operation during plant shutdown when the reactor coolant system is cooled to 350°F and depressurized to 450 psig. These valves are interlocked to automatically isolate when reactor coolant system pressure exceeds 630 psig.

However, the pressure tests of the high head safety injection system can only be performed when the reactor coolant system is at sufficiently high pressure to maintain the first check valve closed. Under these conditions there would be very high potential for overpressurizing the primary system and this test is not recommended.

#### Evaluation

The design of the systems prevents pressurizing the portions of piping listed during the system pressure test. The licensee has committed to perform alternate tests and has agreed to perform a visual inspection of these systems prior to each refueling shutdown. We find the alternate inspections acceptable and conclude that relief from visual inspection of these systems for evidence of leakage during the system pressure test following refueling should be granted.

#### D. General

1. Request that calibration blocks be made to the requirements of Article T-434.1 in Winter 1976 Addenda of Section V in lieu of I-3121 of Section XI.

#### Basis for Requesting Relief

The reason this alternative is requested is that the Code requires that calibration blocks for the examination of

welds in ferritic vessels 2-1/2 inches thick and greater be fabricated from material taken from the component nozzle drop out or material from the component prolongation. As a third alternative, when it is not possible to fabricate that block from material taken from the component, the block may be fabricated from a material of a specification included in the applicable examination volumes of the component. It is required that the acoustic velocity and attenuation of such a block be demonstrated to fall within the range of straight beam longitudinal wave velocity and attenuation found in the unclad components.

For the components in Beaver Valley Unit 1, particularly the pressurizer and steam generators, it will be impossible to meet the requirements of alternatives 1 or 2. Materials of the specification are readily available, but because all the components involved are clad on the inner surface, it would be impossible to obtain a comparison of sound beam velocities and attenuations in the unclad component.

#### Evaluation

Since there is no material available from a drop out or component prolongation, the licensee has committed to fabricate the calibration block from a material of the same specification, product form and heat treatment as the materials being joined. This is in accordance with T-434.1.1 of the Winter 1976 Addenda of Section V. We agree that the requirement of I-3121 that requires the acoustic velocity and attenuation of the block to be demonstrated to fall within the ranges found in the unclad components is impractical since these components are clad. We have evaluated this request and consider it acceptable.

2. Request to apply the Acceptance Standards as provided in Article IWB-3000 of the 1977 Edition of ASME Section XI for those areas which are in the course of preparation as defined in the 1974 Section XI including the Summer 1975 Addenda.

#### Code Requirements

Where acceptance standards for a particular component or Examination Category are in the course of preparation,

evaluation shall be made of any indications detected during any inservice examination that exceed the acceptance standards for materials and welds specified in the Section III edition applicable to the construction of the component in order to determine disposition.

#### Licensee Basis for Requesting Relief

Articles IWC-3000 and IWD-3000 entitled, "Evaluation of Examination Results," are in the course of preparation by the Code Committee and, as yet, are not available for use as defined in the 1974 Edition of Section XI with Addenda through Summer 1975. The rules of Article IWB-3000 of the 1977 Edition of Section XI will be utilized.

#### Evaluation

The rules of IWB-3000 of the 1977 Edition of Section XI are more appropriate for evaluation of service induced defects than the construction code. The construction codes are outdated and are not consistent with inservice inspection standards. The staff's position is that the acceptance standards as defined in the 1977 Edition of Section XI are acceptable and may be applied in those cases where the acceptance standards in the 1974 Code, Summer 1975 Addenda, are in the course of preparation.

3. Request to use Appendix III of Section XI in lieu of Article 5 of Section V as a guidelines for piping weld inspection.

#### Basis for Requesting Relief

This alternative is requested because the Code provides no other guidelines for the inservice examination of piping welds.

#### Evaluation:

IWA-2232 of Section X states that where Appendix I is not applicable, the provisions of Article 5 of Section V shall

apply regarding ultrasonic examinations. Appendix III of Section XI, Winter 1975 Addenda, provides rules for ultrasonic examination of ferritic steels and Supplement 7 provides additional guidance for examination of austenitic welds. Therefore, the use of either Article 5 or Appendix III is acceptable.

#### Summary

Based on the evaluations of the requested reliefs from the Code requirements it is concluded that the Beaver Valley Unit 1 Inservice Inspection Program meets the requirements of the 1974 Edition through Summer 1975 Addenda of the ASME Section XI Code to the extent practical and thus is in compliance with 10 CFR 50.55a (g).

#### Environmental Consideration

We have determined that the amendment does not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendment involves an action which is insignificant from the standpoint of environmental impact and, pursuant to 10 CFR §51.5(d)(4), that an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of this amendment.

#### Conclusion

We have concluded, based on the considerations discussed above, that: (1) because the amendment does not involve a significant increase in the probability or consequences of accidents previously considered and does not involve a significant decrease in a safety margin, the amendment does not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Date: December 4, 1979

TABLE 1  
BEAVER VALLEY UNIT 1  
INSERVICE INSPECTION PROGRAM  
ASME CODE CLASS 1 COMPONENTS

TABLE IWB-2600 ITEM NO.	TABLE IWB-2500 EXAMINATION CATEGORY	SYSTEM OR COMPONENT	CODE APPLICABLE TO CONSTRUCTION	AREA TO BE EXAMINED	CODE EXAMINATION REQUIREMENT	ALTERNATIVE EXAMINATION REQUIRED
B1.2	B-B	Reactor Vessel	III-A 1968 W68	Lower Head Ring to Peel Segment Circumferential Weld	Volumetric	Notes 1 & 2
B1.2	B-B	Reactor Vessel	III-A 1968 W68	Lower Head Peel Segment Meridional Welds (6)	Volumetric	Notes 1 & 2
B1.2	B-B	Reactor Vessel	III-A 1968 W68	Lower Head Peel Segment to Disc Circumferential Weld	Volumetric	Notes 1 & 2
B1.2	B-B	Reactor Vessel	III-A 1968 W68	Closure Head Peel Segment to Disc Circumferential Weld	Volumetric	Note 2
B2.2	B-D	Pressurizer	III-A 1965 W66	Nozzle to Vessel Welds	Volumetric	Note 4
B3.2	B-D	Steam Generators (3)(Primary Side)	III-A 1965 S67	Nozzle to Vessel Welds	Volumetric	Note 4
B4.1	B-F	Piping Pressure Boundary	B31.1, 1967	Safe End to Pipe Welds	Volumetric and Surface	Note 5
B4.5	B-J	Piping Pressure Boundary	B31.1, 1967	Circumferential and Longitudinal Pipe Welds	Volumetric	Note 5, Table 2

TABLE 1  
(CONTINUED)

TABLE IWB-2600 ITEM NO.	TABLE IWB-2500 EXAMINATION CATEGORY	SYSTEM OR COMPONENT	CODE APPLICABLE TO CONSTRUCTION	AREA TO BE EXAMINED	CODE EXAMINATION REQUIREMENT	ALTERNATIVE EXAMINATION REQUIRED
B4.6	B-J	Piping Pressure Boundary	B31.1, 1967	Branch Pipe Connection Welds Exceeding 6-inch Diameter	Volumetric	Note 5
B4.9	B-K-1	Piping Pressure Boundary	B3.1., 1967	Integrally Welded Supports	Volumetric	Note 6
B5.1	B-G-1	Reactor Coolant Pump	III-A, 1968	Pressure Retaining Bolts - Seal Housing Bolts	Volumetric - In Place	Note 3
		System Pressure Tests Class 1 Components		Cold leg injection from accumulators between check valves 48, 49, 50, 51, 52, and 53, test lines to valves 850 B, D and F and RHR return lines to valves 720 A and B.	Visual/Hydro-static Pressure	Note 15
		System Pressure Tests Class 1 Components		Hot leg low head injection between check valves 20, 21 and 22 and 15, 16 and 17 and high head injection to check valves 83 and 84.	Visual/Hydro-static Pressure	Note 16
		System Pressure Tests Class 1 Components		Cold leg low head injection between check valves 23, 24 and 25 and 10, 11 and 12 and boron injection to check valves 100, 101 and 102.	Visual/Hydro-static Pressure	Note 16

TABLE 1  
(CONTINUED)

TABLE IWB-2600 ITEM NO.	TABLE IWB-2500 EXAMINATION CATEGORY	SYSTEM OR COMPONENT	CODE APPLICABLE TO CONSTRUCTION	AREA TO BE EXAMINED	CODE EXAMINATION REQUIREMENT	ALTERNATIVE EXAMINATION REQUIRED
		System Pressure Tests Class 1 Components		RHR take-off line between normally closed (with pressure interlock) valves 700 and 701.	Visual/Hydro- static Pressure	Note 17

TABLE 1 (CONTINUED)  
 BEAVER VALLEY UNIT 1  
 INSERVICE INSPECTION PROGRAM  
 ASME CODE CLASS 2 COMPONENTS

TABLE IWB-2600 ITEM NO.	TABLE IWB-2500 EXAMINATION CATEGORY	SYSTEM OR COMPONENT	CODE APPLICABLE TO CONSTRUCTION	AREA TO BE EXAMINED	CODE EXAMINATION REQUIREMENT	ALTERNATIVE EXAMINATION REQUIRED
C1.2	C-B	Residual Heat Exchangers (2) (Tube Side) RH-E-1A & 1B	IIIC	Nozzle to Vessel Welds	Volumetric	Note 9
C1.1	C-A	Seal Water Return Filter CH-FL-3	IIIC	Cover Weldment to Shell Weld	Volumetric	Note 10
C1.1	C-A	Seal Water Return Filter CH-FL-3	IIIC	Head to Shell Weld	Volumetric	Note 10
C1.3	C-C	Seal Water Return Filter CH-FL-3	IIIC	Integrally Welded Supports	Surface	Note 10
C1.1	C-A	Seal Water Heat Exchanger CH-E-1	IIIC	Shell to Flange Weld Head to Shell Weld	Volumetric Volumetric	Note 11 Note 11
C1.1	C-A	Regenerative Heat Exchanger CH-E-3	IIIC	Head to Shell Welds (6)	Volumetric	Note 7
C1.1	C-A	Regenerative Heat Exchanger CH-E-3	IIIC	Shell to Tubesheet Welds (6)	Volumetric	Note 8

TABLE 1  
(CONTINUED)

TABLE IWB-2600 ITEM NO.	TABLE IWB-2500 EXAMINATION CATEGORY	SYSTEM OR COMPONENT	CODE APPLICABLE TO CONSTRUCTION	AREA TO BE EXAMINED	CODE EXAMINATION REQUIREMENT	ALTERNATIVE EXAMINATION REQUIRED
C1.1	C-A	Regenerative Heat Exchanger CH-E-3	IIIC	Head to Shell Welds (6)	Volumetric	Note 7
C1.1	C-A	Regenerative Heat Exchanger CH-E-3	IIIC	Shell to Tubesheet Welds (6)	Volumetric	Note 8
C1.1	C-A	Seal Water Injection Filters (2) CH-FL-4A & 4B	IIIC	Head to Shell Weld	Volumetric	Note 10
C1.1	C-A	Seal Water Injection Filters (2) CH-FL-4A & 4B	IIIC	Shell to Flange Weld	Volumetric	Note 10
C1.3	C-C	Seal Water Injection Filters (2) CH-FL-4A & 4B	IIIC	Integrally Welded Supports	Surface	Note 10
C1.4	C-D	Seal Water Injection Filters (2) CH-FL-4A & 4B	IIIC	Pressure Retaining Bolting	Visual and Volumetric	Note 11
C1.1	C-A	Reactor Coolant Filter CH-FL-2	IIIC	Cover Weldment to Shell Weld	Volumetric	Note 10

TABLE 1  
(CONTINUED)

TABLE IWB-2600 ITEM NO.	TABLE IWB-2500 EXAMINATION CATEGORY	SYSTEM OR COMPONENT	CODE APPLICABLE TO CONSTRUCTION	AREA TO BE EXAMINED	CODE EXAMINATION REQUIREMENT	ALTERNATIVE EXAMINATION REQUIRED
C1.1	C-A	Reactor Coolant Filter CH-FL-2	IIIC	Head to Shell Weld	Volumetric	Note 10
C1.3	C-C	Reactor Coolant Filter CH-FL-2	IIIC	Integrally Welded Supports	Surface	Note 10
C2.1	C-F; C-G	Piping Systems	B31.1	Circumferential Butt Welds	Volumetric	Note 5
C2.3	C-F; C-G	Piping Systems	B31.1	Branch Pipe to Pipe Welds	Volumetric	Note 5
C3.1	C-F	Centrifugal Charging Pumps (3) CH-P-1A, 1B & 1C		Pump Casing Welds	Volumetric	Note 12
		System Pressure Tests Class 2 Components		R.C. pump seal bypass line from check valves 191, 192 and 193 to MO valve 307.	Visual/Hydrostatic Pressure	Note 13
		System Pressure Tests Class 2 Components		R.C. pump leak off line to manually operate valves 211, 212 and 213, 202, 205, 206, 346, 347 and 348.	Visual/Hydrostatic Pressure	Note 13

TABLE 1  
(CONTINUED)

TABLE IWB-2600 ITEM NO.	TABLE IWB-2500 EXAMINATION CATEGORY	SYSTEM OR COMPONENT	CODE APPLICABLE TO CONSTRUCTION	AREA TO BE EXAMINED	CODE EXAMINATION REQUIREMENT	ALTERNATIVE EXAMINATION REQUIRED
		System Pressure Tests Class 2 Components		R.C. pump seal injection line from check valve 181, 182 and 183 to MOV 308 A, B and C.	Visual/Hydro-static Pressure	Note 13
		System Pressure Tests Class 2 Components		Excess letdown from valve 201 to HCV 137.	Visual/Hydro-static Pressure	Note 13
		System Pressure Tests Class 2 Components		Letdown line from valve LCV460B to orifice outlet valves 200 A, B and C.	Visual/Hydro-static Pressure	Note 13
		System Pressure Tests Class 2 Components		Pressurizer steam space sampling line from valve 64 to 65, pressurizer liquid space sampling line from valve 545F to SS108, and loop sampling lines from valves 1, 8, 6, and 10 to valves SS106 A, B, C, and D.	Visual/Hydro-static Pressure	Note 13

TABLE 1 (CONTINUED)  
 BEAVER VALLEY UNIT 1  
 INSERVICE INSPECTION PROGRAM  
 GENERAL REQUIREMENTS

TABLE IWB-2600 ITEM NO.	TABLE IWB-2500 EXAMINATION CATEGORY	SYSTEM OR COMPONENT	CODE APPLICABLE TO CONSTRUCTION	AREA TO BE EXAMINED	CODE EXAMINATION REQUIREMENT	ALTERNATIVE EXAMINATION REQUIRED
		Calibration Blocks		Welds in Ferritic Vessels 2-1/2 inches thick and greater.	I-3121 of Section XI	Note 14
		Acceptance Standards		Class I Components	1974 thru Summer 1975 Addenda	1977 Addition (
		Pipe Weld Inspections		Ultrasonic Examinations	1974 thru Summer 1975 Addenda	Winter 1975 Addenda

1. Examination to be performed on the outside of the vessel between adjacent incore instrumentation penetrations provided radiation levels permit such examinations (not to exceed whole body dose of 1250 mr in order to complete any one examination). Examine 60% of one meridional weld and 5% of the adjacent portion of each circumferential weld.
2. Visual examination of welds for evidence of leakage during the performance of system hydrostatic tests shall be performed.
3. Volumetric and surface examination of 100% of the bolts when removed for pump disassembly for maintenance and/or at the end of the 10 year inspection interval whichever occurs first.
4. Integrally cast nozzle-to-head configurations will be visually examined at the radiused sections.
5. Volumetric examination is required to the extent practical. Where less than 100% or required volumetric examination is used, supplemental 100% surface examination is required. Examinations utilizing refracted longitudinal ultrasonic techniques or a technique which utilizes only a 1/2 node calibration will be supplemented by a surface examination.
6. Surface examination of weld surfaces and volumetric examination of base metal is required.
7. 10% of the total one weld shall be examined during each 40 month period.
8. Volumetric examination is required on all areas to the extent applicable and practical. Surface and visual examination is required on areas inaccessible for ultrasonic examination.
9. Visual inspection of the nozzle and reinforcement ring areas is required during the inspection period. Code required examination is required in the event the RHR heat exchanger is disassembled for maintenance or other reason.
10. Surface examination is required of the vessel, supports and connecting piping.
11. Surface and visual examination is required.
12. Volumetric examination will be performed during pump disassembly for maintenance or at the end of each inspection interval whichever occurs first.
13. Code hydrostatic pressure and visual examination on Class 2 systems where possible and/or visual examination on remaining Class 2 systems at the system nominal operating pressure in accordance with requirements of IWB-5221 for the adjoining Class 1 systems.

TABLE 1 NOTES (CONTINUED)

14. Calibration blocks will be in conformance with Article T-434.1 in Winter 1976 Addenda of Section V.
15. Visual and hydrostatic pressure test will be performed to the accumulator operating pressure of 585 to 681 psig.
16. Visual and hydrostatic pressure test will be performed at the normal reactor coolant system pressure using the charging pumps.
17. Visual and hydrostatic pressure test will be performed at a temperature of 300-350°F and a pressure of 450 psig.

TABLE 2

PIPING PRESSURE BOUNDARY  
CIRCUMFERENTIAL AND LONGITUDINAL PIPE WELDS  
(Specific Welds Identified in Item B4.5 From Table 1)

- (a) Loop 1 Cold Leg Low Head SIS; Weld No. 7
- (b) Loop 1 R.T.D. Return Line; Weld No. 12
- (c) Loop 2 Accumulator Discharge Line; Weld No. 1
- (d) Loop 2 R.T.D. Return Line; Weld No. 12
- (e) Loop 3 Accumulator Discharge Line; Weld No. 1
- (f) Loop 3 R.T.D. Return Line; Weld No. 12
- (g) Pressurizer Relief Line; Weld No. 22
- (h) Loop 3 Pressurizer Spray Line; Weld No. 33
- (i) Longitudinal welds in the primary coolant loop which are fabricated from two halves of austenitic stainless steel castings and welded together by the electroslag process.
- (j) Loop 1 Hot Leg Low Head SIS; Weld No. 18
- (k) Loop 2 Accumulator Discharge Line; Weld No. 9
- (l) Loop 2 Cold Leg Low Head SIS; Weld No. 15
- (m) Loop 3 Accumulator Discharge Line; Weld Nos. 12 and 17
- (n) Loop 3 Hot Leg Low Head SIS; Weld No. 9
- (o) Pressurizer Relief Line; Weld No. 11
- (p) Loop 1 Pressurizer Spray Line; Weld Nos. 6 and 10
- (q) Loop 3 Pressurizer Spray Line; Weld No. 36
- (r) Pressurizer Safety Valve Lines; Weld Nos. 8, 17 and 26

UNITED STATES NUCLEAR REGULATORY COMMISSIONDOCKET NO. 50-334DUQUESNE LIGHT COMPANYOHIO EDISON COMPANYPENNSYLVANIA POWER COMPANYNOTICE OF ISSUANCE OF AMENDMENT TO FACILITY  
OPERATING LICENSE

The U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 22 to Facility Operating License No. DPR-66 issued to Duquesne Light Company, Ohio Edison Company, and Pennsylvania Power Company (the licensees), which revised Technical Specifications for operation of the Beaver Valley Power Station, Unit No. 1 (the facility) located in Beaver County, Pennsylvania. The amendment is effective as of the date of issuance.

The amendment approves the Beaver Valley Unit No. 1 inservice inspection program and grants relief of certain inspection requirements.

The application for the amendment complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license amendment. Prior public notice of this amendment was not required since this amendment does not involve a significant hazards consideration.

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The Commission has determined that the issuance of this amendment will not result in any significant environmental impact and that pursuant to 10 CFR §51.5(d)(4) an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with issuance of this amendment.

For further details with respect to this action, see (1) the application for amendment dated October 28, 1976, as supplemented October 10, 1977, June 12, 1978, July 24, 1978 and August 10, 1979, (2) Amendment No. 22 to License No. DPR-66 and (3) the Commission's related Safety Evaluation. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N.W., Washington, D.C. and at the B. F. Jones Memorial Library, 663 Franklin Avenue, Aliquippa, Pennsylvania 15001. A copy of items (2) and (3) may be obtained upon request addressed to the U. S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Director, Division of Operating Reactors.

Dated at Bethesda, Maryland, this 4th day of December, 1979.

FOR THE NUCLEAR REGULATORY COMMISSION



A. Schwencer, Chief  
Operating Reactors Branch #1  
Division of Operating Reactors