



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

NOV 7 1984

Docket No. 50-412

MEMORANDUM FOR: [REDACTED]

for Licensing  
Division of Licensing

FROM:

William V. Johnston, Assistant Director  
Materials, Chemical & Environmental Technology  
Division of Engineering

SUBJECT:

SUPPLEMENTAL SAFETY EVALUATION REPORT FOR BEAVER VALLEY  
POWER STATION, UNIT NO. 2

Plant Name: Beaver Valley Power Station, Unit No. 2  
Suppliers: Westinghouse Electric Corporation; Duquesne Light Company  
Licensing Stage: OL  
Docket No.: 50-412  
Responsible Branch and Project Manager: LB #3; M. Ley  
Reviewer: J. Wing  
Description of Task: Operating License Review  
Status: SSER Complete - One confirmatory item

In our Safety Evaluation Report, we concluded that Section 9.3.2B (Post-Accident Sampling) met nine of the eleven criteria in Item II.B.3 of NUREG-0737.

By letter dated October 10, 1984, the applicant provided additional information. Enclosed is our safety evaluation (Attachment 1). Based on our evaluation, we now conclude that all of the eleven criteria in Item II.B.3 of NUREG-0737 are met, and the proposed post-accident sampling system is acceptable.

Criterion (2) of Item II.B.3 of NUREG-0737 is a confirmatory item to be in place prior to fuel load.

Contact: J. Wing  
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Thomas M. Novak

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Input for the SALP (Attachment 2) is also enclosed.

The applicant's proposed post-accident sampling system is a new system. For our benefit, we would appreciate being informed by the Region of any problems that were identified as a result of inspection.

William V. Johnston, Assistant Director  
Materials, Chemical & Environmental  
Technology  
Division of Engineering

Attachments: As stated

cc: R. Vollmer  
D. Eisenhut  
V. Benaroya  
C. McCracken  
G. Knighton  
T. Sullivan  
S. Pawlicki  
M. Ley  
J. Wing  
K. Parczewski

## ATTACHMENT 1

Supplemental Safety Evaluation Report  
by the Office of Nuclear Reactor Regulation  
for Duquesne Light Company  
Beaver Valley Power Station, Unit No. 2  
Docket No. 50-412

### 9.3.2 Process and Post-Accident Sampling Systems

#### B. Post-Accident Sampling System (NUREG-0737, II.B.3)

##### Introduction

In our safety evaluation, we concluded that the post-accident sampling system met nine of the eleven criteria in Item II.B.3 of NUREG-0737. The two criteria which were unresolved are:

- (2) Provide a plant-specific procedure to estimate the extent of core damage.
- (10) Provide information on the performance of the PASS instrumentation and analytical procedures in the post-accident water chemistry and radiation environment.

By letter dated October 10, 1984, the applicant provided additional information.

##### Evaluation

###### Criterion (2):

The applicant shall establish an onsite radiological and chemical analysis capability to provide, within the three-hour time frame established above, quantification of the following:

- a) certain radionuclides in the reactor coolant and containment atmosphere that may be indicators of the degree of core damage (e.g., noble gases, iodines and cesiums, and non-volatile isotopes);
- b) hydrogen levels in the containment atmosphere;
- c) dissolved gases (e.g., H<sub>2</sub>), chloride (time allotted for analysis subject to discussion below), and boron concentration of liquids;
- d) alternatively, have in-line monitoring capabilities to perform all or part of the above analyses.

The PASS provides for in-line analysis of the reactor coolant and containment sump samples for total dissolved gas and oxygen, pH, chloride and boron concentrations, and gross radioactivity. Hydrogen and oxygen in containment air are analyzed by in-line instrumentation. Radionuclide gamma spectrum analysis will be performed via grab samples at the onsite emergency response facility laboratory.

The applicant has adopted the Westinghouse Owners Group post-accident core damage assessment methodology, and has committed to prepare a plant-specific procedure by June 1985.

We determined that these provisions meet Criterion (2) of Item II.B.3 in NUREG-0737, and are, therefore, acceptable. Confirmation of completion of the plant-specific core damage estimate procedure should be provided prior to fuel load.

Criterion (10):

Accuracy, range, and sensitivity shall be adequate to provide pertinent data to the operator in order to describe radiological and chemical status of the reactor coolant system.

The accuracy, range, and sensitivity of the PASS instruments and analytical procedures are consistent with the recommendations of Regulatory Guide 1.97, Rev. 3, and the clarifications of NUREG-0737, Item II.B.3, Post-Accident Sampling Capability, transmitted to the applicant on August 31, 1983. Therefore, they are adequate for describing the radiological and chemical status of the reactor coolant. The analytical methods and instrumentation were selected for their ability to operate in the post-accident sampling environment. Equipment used in post-accident sampling and analyses will be calibrated or tested at least every six months. Retraining of operators for post-accident sampling is scheduled at a frequency of once every six months.

We determined that these provisions meet Criterion (10) of Item II.B.3 in NUREG-0737, and are, therefore, acceptable.

#### Conclusion

Based on the above evaluation, we now conclude that the post-accident sampling system meets all eleven criteria of Item II.B.3 of NUREG-0737 and is, therefore, acceptable.

#### Summary

##### Confirmatory Item

Prior to fuel load, a plant-specific procedure to estimate the extent of core damage should be provided.

## ATTACHMENT 2

### Input to the SALP Process

#### A. Functional Area: Chemical Technology

##### 1. Management involvement in assuring quality

Throughout the review process, the applicant's activities exhibited evidence of prior planning. Policies for quality assurance of protective coating systems were adequately stated and understood.

Rating: Category 2

##### 2. Approach to resolution of technical issues from a safety standpoint

The applicant's approach to resolution of the post-accident sampling capability and secondary water chemistry displayed clear understanding of our concern. Conservatism was generally exhibited. The issues were resolved in a viable and sound manner.

Rating: Category 2

##### 3. Responsiveness to NRC initiatives

With few exceptions, the applicant provided timely written and oral responses to our request for additional information. Acceptable resolutions were proposed.

Rating: Category 2