

# Duquesne Light Company

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U. S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, DC 20555

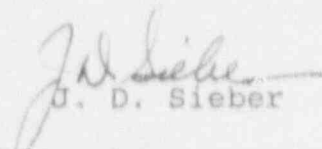
**Subject:** Beaver Valley Power Station, Unit No. 1 and No. 2  
BV-1 Docket No. 50-334, License No. DPR-66  
BV-2 Docket No. 50-412, License No. NPF-73  
Commercial Grade Material Evaluation Program

Reference: 1) NRC Inspection Report Nos. 50-334/91-201 and  
50-412/91-201

During the period of March 4-8, 1991, the NRC conducted an assessment of procurement and commercial-grade dedication programs at BVPS. The reference NRC Inspection Report summarized the results of the assessment. DLC has taken steps to correct the weaknesses identified in that report.

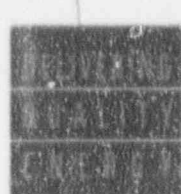
In response to the report's conclusion that programmatic requirements should be established to determine the basis for the use of commercial-grade stock that was purchased before September, 1989, DLC is planning to implement an evaluation program. A description of the evaluation process for stored commercial-grade material is attached for your information. Should you have any questions concerning this program, please contact G. L. Beatty at 412-393-5225.

Sincerely,

  
J. D. Sieber

cc: Mr. L. W. Rossbach, Sr. Resident Inspector  
Mr. T. T. Martin, NRC Region I Administrator  
Mr. U. Potapovs, Vendor Inspection Branch  
Mr. A. W. DeAgazio, Project Manager  
Mr. M. L. Bowling (VEPCO)

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## Evaluation Process for Stored Commercial Grade Material

### 1.0 Background

During the NRC Assessment of the procurement and commercial grade dedication programs at the Beaver Valley Power Station, Report Nos. 50-334/91-201 and 50-412/91-201, the NRC expressed concern that "wholesale grandfathering is not appropriate for all warehoused CGI's."

In NRC Generic Letter 91-05, the staff clarified their position regarding the review of past procurements as follows:

"In addition, the staff does not expect licensees to review all past procurements. However, if during current procurement activities, licensees identify shortcomings in the form, fit, or function of specific vendor products, or if failure experience or current information on supplier adequacy indicates that a component may not be suitable for service, corrective actions are required for all such installed items in accordance with Criterion XVI of 10 CFR Part 50 Appendix B. Also in accordance with Criterion XVI, licensees must determine programmatic causes when actual deficiencies in several products from different vendors are identified during current procurement activities and these deficiencies lead to the replacement of installed items as part of corrective action. In such cases, a further sampling of previously procured commercial-grade items may be warranted."

The NRC Staff further clarified their position in Beaver Valley Assessment Report as follows:

"Currently, there are no program requirements to determine if the item may have a detrimental effect on plant safety by reviewing the item's performance record based on factors such as operational failures, knowledge of problem manufacturers or suppliers ... and industry-wide performance data identified in documents issued by the NRC (such as bulletins, notices), licensee event reports issued by licensees or documents issued by the Institute of Nuclear Power Operations through the Nuclear Plant Reliability Data System (NPRDS). ... it may be appropriate to look at the complexity of the part, plant application, and

prior acceptance of and dedication activities for the CGI before concluding that no dedication action is required."

The planned project is specifically directed at addressing the staff's position by performing an evaluation on all stored commercial grade materials which had been purchased prior to September 1989 and had not been previously dedicated to current standards (approximately 7800 items). The purpose of the evaluation is to provide reasonable assurance that there have been no identified problems which would indicate that a component may not be suitable for service.

## 2.0 Corrective Action Plan

The evaluation process for commercial grade material will establish the acceptability of stored commercial grade material based on documented performance history and analysis (as required). The process flow is presented in Figure 2-1. The evaluation of commercial grade items has five key tasks including development of item groupings, development of historical performance evaluations, evaluation of problem items, performance of economic screens, identification of attributes for verification of problem items, and performance of dedication evaluations in accordance with DLCo dedication procedures.

### Item Grouping

Using the download(s) of stock item information obtained from DLCo, the 7,784 line items will be grouped. At a minimum, a group will be established for each NPRDS component code. Additional groups will be developed as appropriate using three criteria:

- |              |  |
|--------------|--|
| Function     | Materials performing similar safety functions or integral to the performance of safety functions may be grouped together. Unique operating conditions and qualification requirements will also be considered. Functional groupings may be subdivided as necessary to reflect independent or dissimilar subsystems. |
| Complexity   | The extremes of design complexity and difficulty in verifying the design characteristics of items will be considered when establishing an item grouping.   |
| Manufacturer | Items may be grouped according to manufacturer depending upon past experience with supply chain  |

Manufacturer Items may be grouped according to manufacturer depending upon past experience with supply chain integrity, manufacturer quality control history, presence at BVPS and industry experience with the manufacturer.

No single criteria takes precedence over the others. Each criteria will be applied based on prior experience and knowledge of industry concerns about commercial grade materials. The justification for the grouping approach is based on the relationship between function and critical characteristics. A written justification for the selection basis of each group will be provided with the documentation package for each group.

#### Historical Performance Evaluation

Existing DLCo dedication evaluations will be distributed across these groups to characterize the groups using past DLCo dedication experience. If the current dedication experience (including acceptance history and consistency of the group/channel) for any group is sufficient to justify acceptability of the group, justification will be documented and no further analysis will be required for items within that group. Dedication performance experience with similar items at other nuclear utilities may also be employed, when available, to support justification for acceptability of a material group (provided outside utility efforts meet DLCo requirements).

Remaining groups will be researched to identify any potential problems or material issues from a review which will consider such sources as:

- NRC Generic Letters,
- NRC Notices and Bulletins,
- NUREG-0040,
- 10 CFR 21 Reports,
- BVPS maintenance history,
- BVPS dedication history,
- BVPS receipt inspection experience,
- NPRDS failure data, and
- Other knowledge of problem manufacturers and equipment/item performance history.

Additional engineering judgement may be applied to each grouping, considering such issues as the simplicity or complexity of the item, the importance to safety, and the conformance to recognized industry codes and standards.

Results will be documented for each group, establishing a sound technical basis for acceptance of the group (and each item within the group).

#### Problem Items

Items or groups for which an acceptable performance record cannot be established will be subject to further evaluation. The first phase of this evaluation will be to determine the extent to which any of the identified problems applies to the item or group. This decision will not be based on percentages of failures within a group, but rather, will consider the number of failures, the nature of the failures, the specific items which failed (manufacturer, application and complexity), and implications on material quality.

Problems identified in NRC notifications and other industry sources which correlate to DLCo problems will be investigated to determine past corrective actions by DLCo. Documented justification for acceptability will be provided for items where the identified problems can be demonstrated as not being applicable to the subject group.

#### Economic Screen

When an identified problem is determined to be applicable to an item or group of items, an economic screen will be applied to determine if further evaluation is cost justified. The economic screening criteria will be based on the inventory value of existing inventory as gauged by four criteria:

- Criticality of intended safety related application(s),
- Issue history,
- Material dollar value, and
- Lead time for new procurement.

Specific circumstances related to any one of these criteria may be adequate basis for continuing the material evaluation process.

#### Attribute Verification

For items or groups of items which pass through the economic screen, an evaluation will be performed to identify attributes for verification which are critical to the problem resolution. When required for problem resolution, the determination of critical characteristics for acceptance will be related to the item's identified safety function. Only attributes identified as a result of performance



history weaknesses will be identified, unless the scope and frequency of problems suggests a more generic material quality concern.

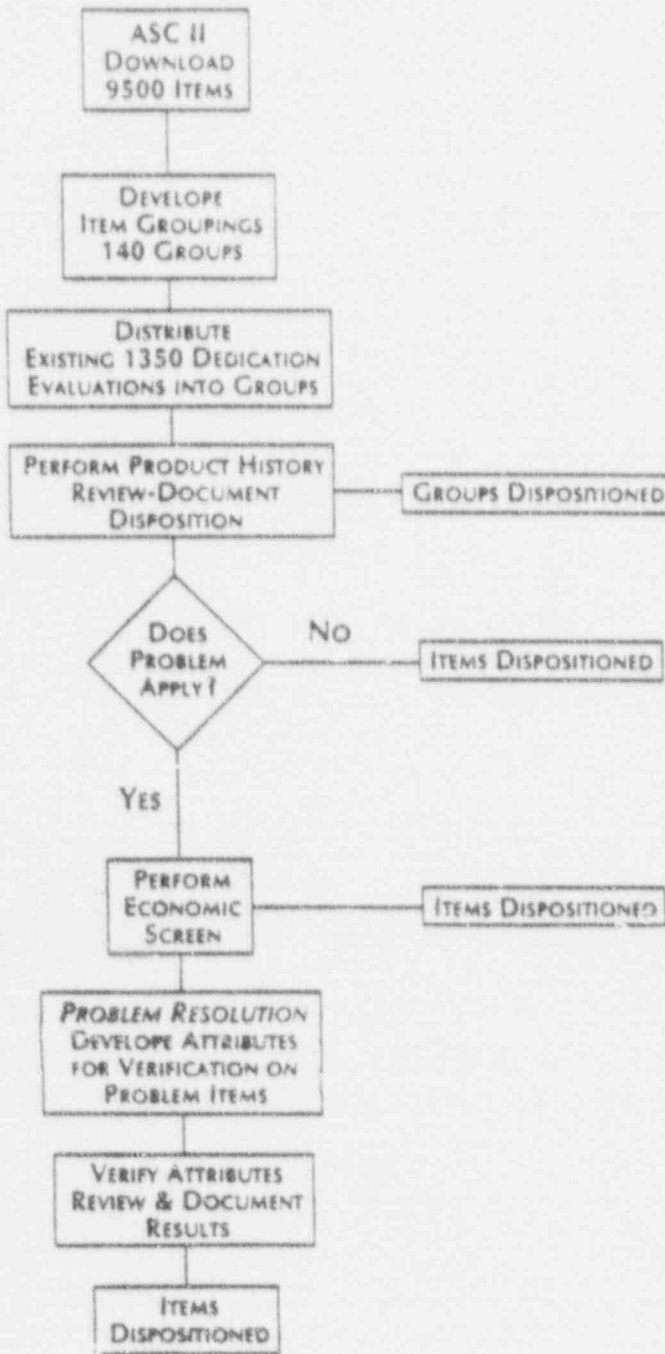
Results will be documented for each group of items which documents a sound technical basis for acceptance of the group (and each item within the group) with no further evaluation.

Dedication

Dedication of remaining items will be performed in accordance with DLCo Procedure NPD 40.0. Sampling plans proposed for verification of critical characteristics will be based on the methodology described in EPRI NP-7218.

Each step is progressively more detailed, thorough and item specific. At any point, the technical evaluator may determine that the process has established reasonable assurance of an items suitability for service and no further investigation will be conducted at this time.

FIGURE 2-1  
EVALUATION METHODOLOGY



Attachment 1

**References**

- 1) 10 CFR 21
- 2) 10 CFR 50 Appendix B
- 3) NRC Generic Letter 89-02
- 4) NRC Generic Letter 91-05
- 5) NRC Assessment Report Numbers 50-334/91-201 and 50-412/91-201
- 6) EPRI NP-5652 (NCIG 07)
- 7) Maintenance Rule