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 RUSSELL, W.T. Region 1, Ofc of the Director

SUBJECT: Responds to IE Bulletin 87-002 & forwards schedule for completion of action items.

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Pennsylvania Power & Light Company

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JAN 11 1988

Harold W. Keiser
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215/770-7502

Mr. William T. Russell
Regional Administrator, Region I
U.S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, PA 19406

SUSQUEHANNA STEAM ELECTRIC STATION
RESPONSE TO BULLETIN 87-02
PLA-2958 FILE R41-2/R41-1A

Docket Nos. 50-387
and 50-388

In response to IE Bulletin 87-02, the attached information provides Pennsylvania Power & Light Company's results for action items (1), (2), (3) and (4) of the bulletin and our schedule for completion of action items (5) and (6). Our final report will be made late due to the time lost arranging for sample selection and the time needed for testing.

If you have any questions, please contact Mr. J. B. Wesner at (215) 770-7878.

Very truly yours,

H. W. Keiser
Vice President-Nuclear Operations

Attachment

cc: ~~NRC Document Control Desk (or Legation)~~

NRC Region I
Mr. J. Stairs, NRC Resident Inspector
Mr. M. C. Thadani, NRC Project Manager

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AFFIDAVIT

COMMONWEALTH OF PENNSYLVANIA)

COUNTY OF LEHIGH) : SS

I, HAROLD W. KEISER, being duly sworn according to law, state that I am Vice President, Nuclear Operations of Pennsylvania Power & Light Company and that the facts set forth on the attached response to IE Bulletin 87-02 are true and correct to the best of my knowledge, information and belief.



Harold W. Keiser
Vice President, Nuclear Operations

Sworn to and subscribed
before me this 11th day
of January, 1988.



Notary Public
MARINA C. BARD, Notary Public
ALLENTOWN, LEHIGH COUNTY
MY COMMISSION EXPIRES JAN. 15, 1990
Member, Pennsylvania Association of Notaries

RESPONSE TO IE BULLETIN 87-02

In response to the specific actions requested by Bulletin 87-02, the following information is provided.

Action Item 1

Describe a) the characteristics currently examined during receipt inspection of fasteners (i.e., head markings for grade and manufacturer symbols, review of certified material test report or certificate of conformance), and b) internal controls utilized during storage and issuance from stock to assure the appropriate use of fasteners.

Response 1.a)

Safety-Related Fasteners

Characteristics of safety-related studs, bolts, cap screws and nuts (material type and grade A-193 grades B7, B8 and B16; SAE J429 grades 5 and 8; A-449; A-325 Types 1, 2 or 3; A-354 grades BB, BC, BD; A-490; A-320 LTM; A-307; and A-563) are examined during receipt inspection in accordance with PP&L procedures. Depending on the procurement document requirements the inspection could include:

(Note: Sampling methods are used for inspection of large quantities where unique traceability from the documentation/certification to each item is not required by the procurement document or referenced specifications, codes or standards.)

- A. Nominal diameter of fastener.
- B. Nominal length of fastener.
- C. Nominal thread pitch.
- D. Dimensions of Hex configuration (Hex, Heavy Hex) or other configurations of fasteners. For example, the dimension across the flats and the thickness of a Heavy Hex bolt head would be verified.
- E. The following markings are verified, as applicable:
 1. Grade marking per material specification.
 2. Heat code traceable to an acceptable Certified Material Test Report.
 3. Manufacturer's identifying mark or logo.

- F. The following details of workmanship are examined, as applicable:
1. The presence of forging laps, bursts, cracks, seams, or other inherent or processing discontinuities.
 2. Presence of other physical damage which may have occurred during handling, storage or shipping (e.g., threads damaged by contact with other fasteners).
- G. Surface finish of fasteners is examined for the following:
1. Rust or corrosion.
 2. Scale.
 3. Discolorations indicating possible disruption of properties by application of excessive thermal gradients in the material (e.g., a "straw-colored" finish at the site of grinding on an Austenitic Stainless Steel Bolt Head).
 4. General cleanliness.
 5. Nicks or scratches in protective coatings (e.g., electro-galvanized Zinc coating).
- H. Documentation requirements (as specified by purchasing documents and applicable codes and standards) verified to be complete and correct.
1. Certified Material Test Report, which may include test results of:
 - a. Chemical Composition.
 - b. Tensile Strength.
 - c. Yield Strength.
 - d. Hardness.
 - e. Impact Strength at specified temperature.
 - f. Elongation of tensile specimen.
 - g. Reduction of area of tensile specimen.
 - h. Proof testing.
 - i. Heat-treatment.

(These characteristics are examined with respect to parameters of acceptability as set forth in the applicable codes and standards. For procurements of ASME material, the Quality Certification is also to be reported and, therefore, is verified. The appropriate edition, addenda and/or revision of applicable codes and standards is verified when required by procurement document or specification.)

2. Certification of Compliance with material specification is verified for including language which specifies "Compliance" and "Certification", as well as the reporting of the appropriate material specification (including the edition/addenda and/or revisions, as applicable), material grade, heat-treatment and quantities, as well as any other requirement for this document which may be imposed by the procurement documents.
 3. Certification of Conformance with purchase order requirements is examined for the following:
 - a. Vendor's name and address.
 - b. Purchase Order number and the number of the latest Change Notice, when applicable.
 - c. The Identifying PP&L Purchase Order item number or PP&L Catalog Number.
 - d. The quantity shipped.
 - e. A description of the item.
 - f. Listing of any PP&L-approved exceptions (e.g., a PP&L-approved request for deviation initiated by the vendor).
 - g. A signature of the authorized vendor representative, that person's title, and the date of signature.
 4. Nondestructive examination reports (when required by purchase documents, codes and/or standards).
- I. Review of Susquehanna Defective Device List to assure material manufacturer has not been listed as unacceptable for supplying material.

Non-Safety-Related Fasteners

Non-safety related fasteners are receipt inspected for acceptability based on the following:

- A. Physical inspection as follows:
1. Nominal diameter of fastener.
 2. Nominal length of fastener.
 3. Nominal thread pitch.
 4. Head configuration.
- B. Material type as verified by grade markings - no confirmatory documentation is required.
- C. Comparison of the material and quantity received against the vendor shipping papers and the Purchase Order.

Response 1.b)

Safety-Related Fasteners

Control of safety-related material through the receipt inspection cycle is also addressed in PP&L procedures. Briefly, controls are implemented as follows:

1. Material enters the Quality Assurance hold area ("Q-HOLD") accompanied by the procurement documents (or other transmittal documentation).
2. Material is logged into Q-HOLD with an entry into the Receiving Inspection Report (RIR) Log, thereby assigning a serialized number (the RIR number) to that receipt.
3. Material is inspected, and/or:
 - a. If discrepancies are found, a Receipt Discrepancy Report (RDR) is issued and material is placed on "Hold", as in "4", below.
 - b. If workload prohibits immediate completion of inspection, material is placed on "HOLD", as in "4", below.
 - c. If material is acceptable, it is released as in "5", below.
4. Materials which require isolation for reasons noted in "3.a." and "3.b", above, are placed on "HOLD", as follows:
 - a. A yellow "HOLD" tag is attached to the item, traceable to the RIR number assigned.
 - b. Material is isolated in the limited-access Q-HOLD area in a location specified by assigned coordinates. The location is duly noted on the RIR.

- c. The material remains at this location pending further action as noted in "5", below.
5. Material is released from Q-HOLD to the Plant Materials Section following closing of the RIR. The RIR may be closed in the following ways:
- a. No discrepancies are found and material is accepted.
 - b. Any and all discrepancies are resolved and material is accepted.
 - c. One or more discrepancies cannot be resolved and the material is rejected.

Safety-related fasteners purchased and maintained as plant inventory are assigned a unique PP&L inventory catalog number and warehouse location. Fasteners are tracked by their assigned PP&L catalog number while in the warehouse inventory. All safety-related fasteners are stored in an inside heated environment and are segregated from non-safety-related inventory.

Prior to introducing fasteners to the inventory, material identification tags are generated and accompany the fasteners while in inventory. The material identification lists the following as a minimum:

- A. Catalog number.
- B. Quality classification code.
- C. Purchase Order number.
- D. Description.
- E. Receipt Inspection Report (RIR) Number.

Fasteners are tracked while in the inventory by the Susquehanna Materials Management System. This computerized system tracks each type of fastener by the assigned catalog number and contains the stock status and warehouse location of each catalog number.

Issuance of safety-related fasteners is controlled by a Material Request/Issue Form. This form is generated by Plant Maintenance personnel and is required for the release of material from the warehouse to the maintenance groups. The Material Request/Issue Form contains the following information:

- A. Equipment/system information where the fastener will be used.
- B. Fastener description.

- C. Fastener quality classification code.
- D. PP&L catalog number.
- E. Warehouse location.
- F. Purchase Order number.
- G. Quantity issued.
- H. Work Authorization (WA) number that will utilize the fastener.

After issuance of the fasteners, the Material Management System transaction register is updated to indicate the WA number that the fasteners were issued for and the quantity issued. A review of the Material Management Transaction Register provides an issue history by catalog number.

The appropriate end use of a safety-related fastener is determined by reviewing the WA Number that was indicated on the Material Request/Issue Form. The Susquehanna Work Authorization procedure requires that when safety-related parts are used, documentation shall be attached to the WA. The documentation required for safety-related parts may be the Material Request/Issue Form or the material identification tag. A review of the WA fastener requirements versus the fasteners provided determines that the appropriate fasteners were utilized.

Non-Safety-Related Fasteners

Non-safety-related fasteners are stored in an inside heated and dry environment in metal storage bins. No traceability is maintained for this limited inventory of fasteners. This inventory represents less than 15% of PP&L total fastener inventory and is totally segregated from safety-related fasteners.

The non-safety-related inventory is utilized by plant maintenance personnel for minor non-safety-related maintenance activities. No traceability is obtained or maintained for the issuance of non-safety fasteners.

Action Item 2

Select a minimum sample of ten (10) non-safety-related fasteners (studs, bolts, and/or cap screws), and ten (10) safety-related fasteners (studs, bolts, and/or cap screws) from current, in use, stock. The sample is to be obtained by the licensee with the participation of an NRC inspector. Fasteners procured to meet the following chemical and mechanical properties are of interest: A-193 grades B7, B8, and B16; SAE J429 grades 5 and 8; A-449; A-325 Types 1, 2 or 3; A-354 grades BB, BC, BD; A-490; A-320 LTM; A-307; A-563; or equivalent.

Response 2

Appropriate samples of non-safety-related and safety-related fasteners were selected for testing on 12/17/87 with the participation of the resident NRC inspector. Details will be provided in our final report along with the results of testing.

Action Item 3

For the selected sample of fasteners in item 2, include a sample of typical nuts that would be used with each fastener (one-for-one). In particular, nuts purchased to the chemical and mechanical specifications of A-194 are of interest.

Response 3

An appropriate sample of nuts were selected on 12/17/87 for testing that would be used with each fastener selected in response to Action Item 2. Details will be provided in our final report along with the results of testing.

Action Item 4

Chemical testing shall be performed on all samples. Mechanical testing shall be performed on each safety-related fastener. Hardness testing shall be performed on each nut and non-safety-related fastener. All testing shall be performed by a laboratory which the licensee has qualified for this type of testing and appears on the licensee's approved vendor list. Testing performed shall be done in accordance with the requirements of the fastener's specification, grade, and class, and the test shall evaluate the ultimate tensile strength, hardness and chemical properties as required by the fastener's specification, grade, and class. Each sample shall be tagged with the sample's ID number.

Response 4

Samples have been individually tagged with the corresponding ID number and sent for the required chemical and mechanical testing to:

Franklin Research Center
20th and Race Streets
Philadelphia, Pennsylvania 19103

Schedule for Completion of Action Items 5 and 6

PP&L expects completion of fastener testing to occur by mid-January 1988. A final report will be submitted to NRC within 30 days of completion of analysis of testing results.