



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PENNSYLVANIA 19406-1415

Enclosure 1

30 MAR 1993

Docket No. 50-423
File No. RI-92-A-0078

Mr. Ronald Gavensky
9 Trading Cove Drive
Norwich, Connecticut 06360

Dear Mr. Gavensky:

Subject: Reactor Head Studs and Bolts from Millstone Unit 3 Construction

This is in response to your telephone conversation of April 16, 1992, in which you brought to our attention, deficiencies with Reactor Head Studs purchased for Millstone Unit 3, and with bolts left over from Millstone Unit 3 construction which were being transferred to station stores.

NRC has reviewed the disposition of the five Non-Conformance Reports (NCRs) written against the Reactor Head Studs, and concluded that corrective actions taken are appropriate and adequate. The findings and conclusions are documented in Inspection Report 50-423/92-24, a copy of which is enclosed. We have referred the matter to our Office of Nuclear Reactor Regulation for evaluation of potential generic applicability.

NRC has also reviewed the actions taken with regard to discrepancies identified during inspection of fasteners for transfer to Millstone stores. We have determined that the NSCP review was cursory, and that the conclusions reached were not supported by the text of the report. However, appropriate testing of the remaining fasteners has determined that the bolts are acceptable for use as-is. These conclusions are documented in NRC Region I Inspection Reports 50-423/92-16 and 50-423/92-24, which are enclosed for your use. We consider these items resolved and closed. We are, however, continuing to review the Northeast Utilities procurement process.

We appreciate you informing us of your concerns, and feel that our actions in these matters have been responsive to those concerns. Should you have any additional questions, or if I can be of further assistance in this matter, please call me collect at (215) 337-5222.

Sincerely,

Roy L. Fuhrmeister
Senior Allegation Coordinator

Enclosures:
As Stated

CERTIFIED MAIL
RETURN RECEIPT REQUESTED



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PENNSYLVANIA 19406-1415

ENCLOSURE

SEP 03 1992

Docket Nos. 50-245; 50-336; 50-423

Mr. John F. Opeka
Executive Vice President-Nuclear
Northeast Nuclear Energy Company
P.O. Box 270
Hartford, Connecticut 06141-0270

Dear Mr. Opeka:

SUBJECT: MILLSTONE COMBINED INSPECTION 50-245/92-16; 50-336/92-18;
50-423/92-16

This refers to the safety inspection conducted by Mr. W. Raymond of this office on June 14, 1992, through July 25, 1992, at Millstone Station in Waterford, Connecticut. The preliminary findings were discussed with Mr. S. Scace, the Unit Directors, and others of your staff at the conclusion of the inspection. Areas examined during the inspection are described in the enclosed report. Within these areas, the inspection focused on issues important to public health and safety, and consisted of performance observations of ongoing activities, independent verification of safety system status and design configuration, interviews with personnel, and review of quality records.

Recently, an apparent increase in the number of mispositioned safety-related valves has occurred at Unit 3. The inspectors performed an independent causal analysis and linked these events to a combination of procedural inadequacies, personnel errors, and weak administrative controls. Your staff identified the events, is aware of the perceived increased frequency of occurrence, and has taken corrective actions including operator sensitization to the importance of configuration control and development of an operator self-verification program. Enforcement discretion was exercised for this matter and the inspectors will continue to monitor the implementation and effectiveness of these corrective actions.

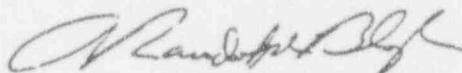
During this inspection period, we determined your efforts to investigate and resolve the Unit 1 reactor vessel water level instrumentation issue were noteworthy. In contrast, during our followup inspection of fastener deficiencies that were not identified by receipt inspection during Unit 3 construction, we noted significant NRC questioning was necessary to ensure your staff performed a thorough review of the materials transferred from Unit 3 construction to the Millstone Stores. Also, we are concerned that Unit 1 was restarted in March 1992 with a localized area of the service water system piping at less than the minimum required wall thickness. This wall thinning was not classified by your staff as a flaw and the guidance of NRC Generic Letter 90-05 was not followed. It is our position that this case should have been treated

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in accordance with Generic Letter 90-05. We understand that you have taken action to assure that flaws including identified wall thinning are evaluated and dispositioned using the guidance in the generic letter.

We appreciate your cooperation.

Sincerely,



A. Randolph Blough, Chief
Projects Branch No. 4
Division of Reactor Projects

Enclosure: NRC Combined Inspection Report 50-245/92-16; 50-336/92-18; 50-423/92-16

cc w/encl:

W. D. Romberg, Vice President - Nuclear, Operations Services
S. E. Scace, Nuclear Station Director
H. F. Haynes, Nuclear Unit Director, Unit 1
J. S. Keenan, Nuclear Unit Director, Unit 2
C. H. Clement, Nuclear Unit Director, Unit 3
R. M. Kacich, Director, Nuclear Licensing
D. O. Nordquist, Director of Quality Services
Gerald Garfield, Esquire
Nicholas Reynolds, Esquire
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Public Document Room (PDR)
Local Public Document Room (LPDR)
Nuclear Safety Information Center (NSIC)
NRC Resident Inspector
State of Connecticut SLO Designee

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report/
Docket: 50-245/92-16; 50-336/92-18; 50-423/92-16

License Nos.: DPR-21; DPR-65; NPF-49

Licensee: Northeast Nuclear Energy Company
P. O. Box 270
Hartford, CT 06141-0270

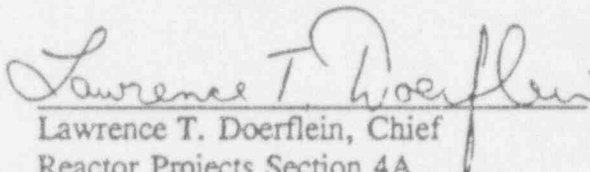
Facility: Millstone Nuclear Power Station, Units 1, 2, and 3

Inspection at: Waterford, CT

Dates: June 14, 1992 - July 25, 1992

Inspectors: W. J. Raymond, Senior Resident Inspector
A. A. Asars, Resident Inspector
K. S. Kolaczyk, Resident Inspector, Unit 1
D. A. Dempsey, Resident Inspector, Unit 2
R. J. Arrighi, Resident Inspector, Unit 3
E. T. Baker, Senior Project Manager, NRR
P. D. Kaufman, Project Engineer, Region I

Approved by:

 9/3/92
Lawrence T. Doerflein, Chief Date
Reactor Projects Section 4A

Scope: NRC resident inspection of plant operations, radiological controls, maintenance, surveillance, security, outage activities, licensee self-assessment, and periodic reports. The inspectors performed special reviews in the following areas: Unit 1 service water piping inspections and repairs, condensate booster pump time delay relay settings, and reactor vessel level instrumentation design; Unit 3 valve alignment problems, power operated relief valve leakage, and construction material incorporation into Millstone Stores; and station implementation of compensatory measures for Thermo-Lag 330 fire barrier material.

Review of plant operations was conducted during periods of backshifts (evening shifts) and deep backshifts (weekends, holidays, and midnight shifts). Coverage was provided for 25 hours during evening backshifts and 4 hours during deep backshifts.

Results: See Executive Summary

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LER 50-423/91-022-01 Failure to Adequately Perform Overlap Testing of the Containment Depressurization Actuation Loops Due to Management Deficiency

Millstone Unit 1 Monthly Operating Report covering May 1992, dated June 10, 1992.

Millstone Unit 1 Monthly Operating Report covering June 1992, dated July 10, 1992.

Millstone Unit 3 Monthly Operating Report covering April 1992, dated May 11, 1992.

Millstone Unit 3 Monthly Operating Report covering June 1992, dated July 10, 1992.

Millstone Unit 3 Monthly Operating Report Covering May 1992, dated June 10, 1992.

No discrepancies were noted.

7.2 Followup of Previous Inspection Items

7.2.1 SWEC Fastener Materials - Units 1 and 3

Unresolved item (50-245/92-12-01) involved non-engineered, Category I (commercial grade) fasteners purchased by Stone & Webster (SWEC) for use in safety-related applications during the construction of Unit 3 that were "left over" and transferred to Millstone stores. During a transfer of material in March 1991, an inspector from the procurement inspection group identified numerous discrepancies with some of the fasteners, (e.g., porosity, bent bolts, linear indications.) This raised questions concerning the effectiveness of SWEC's receipt inspection program, the licensee's oversight of SWEC's QA program, and the licensee's procedures for transferring left over construction material. As reported in NRC inspection report 423/92-12, the licensee tested six fasteners from the suspect population for chemical and mechanical properties; the results were acceptable.

Based on questions raised by the inspectors concerning whether the six previously tested fasteners adequately represented the population of fasteners installed, the licensee tested an additional 30 fasteners randomly selected from the warehouse and one sample chosen by the inspectors that had linear indications that ran from the body into the head of the fastener. On June 26, 1992, the licensee informed the inspectors that all the fasteners met specification requirements for chemistry and mechanical properties. The inspector raised a second concern that the sample was not representative of the population of fasteners because all the manufacturers were not represented. On July 15, 1992, the licensee informed the inspector that additional samples would be tested, for a total of 30 fasteners for each of the three manufacturers: Texas Bolt, Maryland Bolt, and Bethlehem Steel. At the end of this inspection the bolt samples had not been sent for testing. The licensee expects that acceptable test results would indicate that the apparent lack of adequate receipt inspection did not adversely affect plant safety.

Original Fastener Acceptance

In pursuing how the fasteners were originally accepted by SWEC, the inspector reviewed several purchase orders (POs 16349, 19339, 19628) in detail. The POs specified various sizes of hex head cap screws manufactured to ASTM A-193, Grade B7, with no additional quality assurance requirements specified. The inspector also reviewed the purchase requisitions and the SWEC receipt inspection reports associated with these POs.

The purchase requisitions referenced SWEC Specification 2400.000-350, "Specification for Electrical Installation," as the basic specification for fasteners purchased for use in the installation of electrical equipment. Section 5.3 of the specification, "Non-Engineered Items - Category I," requires that a random visual inspection for manufacturing imperfections which could affect normal use or function be performed during receipt inspection.

The SWEC receipt inspection reports under which the bolts were accepted indicated that a visual inspection of the fasteners was performed in accordance with procedure Quality Assurance Directive (QAD) 7.7, "Receiving Inspection - General" (i.e., lot size and sample size were the same), and indicated that all the material was accepted. However, according to the SWEC representatives reviewing the fastener issue for the licensee, only a 30% sample of the fasteners was actually inspected. Recording the sample size as equal to the lot size was SWEC's indication that samples were taken from all the containers. The receipt inspection report listed Attribute List M3-D7.7-10-1131 as the reference for inspection instructions. The attributes inspected included manufacturer's documentation, identification/markings, cleanliness, and dimensions. Neither manufacturing imperfections nor workmanship were included in the list of attributes to be inspected. The discussion of the attributes in QAD 7.7 did not include manufacturing imperfections or workmanship, but gave only a general description of what was to be inspected; no additional information was provided on the receipt inspection report as to what actually constituted the inspection. Paragraph 5.1 of QAD 7.7 states that attributes should be added or deleted where applicable and references the pre-planning section of Quality Standard (QS)-7.1ML, "Receiving Inspection." QS-7.1ML states that Field Quality Control (FQC) is to review the project specifications when developing the receipt inspection plan. The inspector discussed the receipt inspection process with a person employed by SWEC as a receipt inspector at that time. The inspector asked whether any generic guidance existed for performing receipt inspections other than QAD 7.7, and was informed that receipt inspections were performed according to QAD 7.7 and any special instructions contained in the purchase order. Despite these controls for material receipt and inspection, the nonconforming fasteners were accepted by SWEC for construction of Unit 3.

Transfer of Fasteners

During their review of the transfer of material from SWEC to Millstone stores, the procurement inspection group determined that a decision was made in the 1985/1986 time frame that material previously accepted by SWEC did not need to be reinspected prior to the

transfer, except for damage and traceability to the SWEC purchase order and any supplier furnished documentation. This decision was based on the licensee's approval of SWEC's QA program and the audits of SWEC's procurement and receipt inspection programs performed during construction of Unit 3. This decision was not contrary to any licensee procedures and appears to be appropriate given the presumption that SWEC had performed an adequate receipt inspection. As a result of the reliance on SWEC's acceptance of the fasteners and the failure to do an adequate inspection during the transfer, nonconforming fasteners were installed in Unit 3.

The licensee is continuing their review of the scope of this issue and whether items other than fasteners purchased by SWEC as non-engineered, Category I are affected. Unresolved Item 50-245/92-12-01 remains open pending the results of the three vendor's fastener tests and further review of NNECO's disposition of items other than fasteners.

Nuclear Safety Concerns Program

In reviewing the transfer of fasteners from SWEC to Millstone stores, the inspector was informed by the supervisor of the procurement inspection group that an independent review had been performed of the issue and that a limited distribution report had been issued. In following up on the independent report, the inspector determined that the report was the result of a review by an Independent Review Team (IRT) commissioned by the Nuclear Safety Concerns Program (NSCP). The inspector reviewed the IRT report early in the review of the fastener issue and noted that the IRT had not reviewed in detail the SWEC lower tier procedures and procurement documents associated with the fasteners discussed above. The IRT concluded that the licensee's oversight of SWEC's quality assurance program was satisfactory without determining how the nonconforming fasteners were accepted and placed in stock and whether a programmatic problem existed which allowed the acceptance of the discrepant fasteners.

The inspector made an additional observation regarding the independent review of the concern raised regarding inspection guidance for inspecting for visual damage. The concern submitted to the NSCP addressed the issue of a lack of guidance for performing inspections for visual damage during receipt inspection. Based on their review, the IRT concluded that damage would be identified. However, the examples chosen to support that instruction was provided on identifying visual damage were examples for inservice inspection, not receipt inspection. Notwithstanding the IRT's conclusion, the Quality Services Director has an action item to review the definition of visual damage and revise it as necessary to clarify the term for use during receipt inspection.

The concern is being held open by NSCP pending completion of the review of the issues by the Millstone station staff. The inspector concluded that IRT review was cursory in nature in these two areas and that the IRT's conclusions were not supported by the text of the report.

JAN 12 1993

Docket Nos. 50-245; 50-336; 50-423

Mr. John F. Opeka
Executive Vice President-Nuclear
Northeast Nuclear Energy Company
P.O. Box 270
Hartford, Connecticut 06141-0270

Dear Mr. Opeka:

SUBJECT: MILLSTONE COMBINED INSPECTION 50-245/92-25; 50-336/92-27; 50-423/92-24

This refers to the safety inspection conducted by Mr. P. Swetland of this office on September 8, 1992, through October 27, 1992, at Millstone Station in Waterford, Connecticut. The preliminary findings were discussed with Mr. S. Scace, the Unit Directors, and others of your staff at the conclusion of the inspection. Areas examined during the inspection are described in the enclosed report. Within these areas, the inspection focused on issues important to public health and safety, and consisted of performance observations of ongoing activities, independent verification of safety system status and design configuration, interviews with personnel, and review of quality records.

Within the scope of this inspection, the inspectors noted two problems for which enforcement discretion was exercised in accordance with Section VII.B of the Enforcement Policy and no violations were cited. Inconsistent reporting of fire barrier discrepancies among the Millstone units resulted in several missed Unit 1 licensee event reports. This minor problem was promptly corrected by your staff. Unit 1 also reported on a potentially significant degradation of the service water and emergency service water systems during this inspection. External corrosion of certain pipe connections rendered the system unable to meet the stress requirements for a safe shutdown earthquake. Your initiative in finding and promptly correcting this problem, as well as the absence of prior experience and programmatic requirements which would have prevented its occurrence, justified the use of enforcement discretion for this incident. However, similar occurrences in the future may result in stronger enforcement action. During this inspection, we also noted that your response to an identified pin hole leak in the service water supply to the Unit 3 engineered safeguards building was comprehensive and demonstrated a high regard for maintenance of system integrity.

We note that you have committed to develop and implement by February 1993 a comprehensive service water and emergency service water maintenance and inspection strategy. Because of the above noted Unit 1 system degradation, as well as the importance of proper maintenance of these systems, we have a particular interest in this strategy. Therefore, you are requested to inform us in writing of any changes in your planned

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schedule, as well as to send us a copy or summary of the strategy within 30 days after it is approved. The response requested is not subject to the clearance procedures of the Office of Management and Budget as required by the Paperwork Reduction Act of 1980, Public Law No. 96.511.

Finally, some discrepancies were noted in your implementation of corrective actions for previously cited violations. Management has not assured the proper attention to revised measures, such as the Plant Incident Report process, designed to improve the timeliness of your response to plant problems. We are concerned that this situation could detract from your performance enhancement program initiatives to improve procedural adherence at the station.

Your cooperation with us is appreciated.

Sincerely,


A. Randolph Blough, Chief
Projects Branch No. 4
Division of Reactor Projects

Enclosure: NRC Combined Inspection Report 50-245/92-25; 50-336/92-27; 50-423/92-24

cc w/encl:

W. D. Romberg, Vice President - Nuclear, Operations Services
S. E. Scace, Vice President, Millstone Nuclear Power Station
H. F. Haynes, Nuclear Unit Director, Unit 1
J. S. Keenan, Nuclear Unit Director, Unit 2
C. H. Clement, Nuclear Unit Director, Unit 3
R. M. Kacich, Director, Nuclear Licensing
D. O. Nordquist, Director of Quality Services
Gerald Garfield, Esquire
Nicholas Reynolds, Esquire
K. Abraham, PAO (2)
Public Document Room (PDR)
Local Public Document Room (LPDR)
Nuclear Safety Information Center (NSIC)
NRC Resident Inspector
State of Connecticut SLO Designee

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U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Docket/Report Nos.: 50-245/92-25; 50-336/92-27; 50-423/92-24

License Nos.: DPR-21; DPR-65; NPF-49

Licensee: Northeast Nuclear Energy Company
P. O. Box 270
Hartford, CT 06141-0270

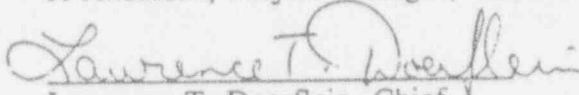
Facility: Millstone Nuclear Power Station, Units 1, 2, and 3

Inspection at: Waterford, CT

Dates: September 8, 1992 - October 27, 1992

Inspectors: P. D. Swetland, Senior Resident Inspector
A. A. Asars, Resident Inspector
K. S. Kolaczyk, Resident Inspector, Unit 1
D. A. Dempsey, Resident Inspector, Unit 2
R. J. Arrighi, Resident Inspector, Unit 3
E. T. Baker, Project Manager, NRR
J. Anderson, Project Manager, NRR

Approved by:


Lawrence T. Doerflein, Chief
Reactor Projects Section 4A

12/1/92
Date

Scope: NRC resident inspection of core activities in the areas of plant operations, radiological controls, maintenance, surveillance, security, outage activities, licensee self-assessment, and periodic reports. The inspectors performed special reviews in the following areas: operation of the Unit 1 reactor vessel level reference leg backfill system, maintenance errors on the Unit 1 emergency service water strainer, retest of the Unit 2 enclosure building filtration system, operability of motor-operated valves at Unit 2, operability determinations for the Unit 3 auxiliary building filter system, and effectiveness of the site material receipt inspection program.

The inspectors reviewed plant operations during periods of backshifts (evening shifts) and deep backshifts (weekends, holidays, and midnight shifts). Coverage was provided for 77 hours during evening backshifts and 22 hours during deep backshifts.

Results: See Executive Summary

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7.3 Combustion Engineering Reactor Head Studs

The inspector reviewed the licensee's disposition of discrepant conditions involving the reactor head studs purchased for Unit 3 from Combustion Engineering (CE). Nonconforming conditions were identified at Millstone during receipt inspection in September 1990, but were not identified by CE or their subcontractor, PCI Energy Services (PCI), prior to delivery to Millstone. The Millstone staff subsequently generated five NCRs (NCRs 290-566, 290-575, 290-589, 290-235, and 290-239) that documented these nonconforming conditions discovered during the receipt inspection and subsequent reinspection of the critical dimensions by the vendor.

The inspector reviewed the five NCRs, including the actions taken to resolve the nonconforming conditions. The nonconforming conditions consisted of discrepancies in documentation and dimensions. All 60 of the reactor head studs were dispositioned use-as-is in October 1990. The documentation problems were resolved by receiving corrected documentation from the suppliers. The dimensional problems were dispositioned as use-as-is based on either chasing out internal threads to remove excessive coatings, load testing, running the reactor head nuts over the studs to assure proper fit, or discussions with the supplier about the safety significance of the particular dimensional nonconformance.

Based on this review, the inspector concluded that the licensee adequately addressed the reactor head stud nonconformances.

The inspector also reviewed the actions the licensee took with regard to the performance of CE. The initial action was to change CE's status on the approved suppliers list from "approved" to "conditionally approved." This required anyone who wanted to place an order with CE to contact Procurement Quality Services to determine what the conditions for placing an order with CE were. This included source inspection for all orders for items purchased to the requirements of the ASME Boiler and Pressure Vessel Code (ASME Code). The status of CE has been returned to "approved"; however, the condition of source inspection for ASME Code orders is still in place. The inspector questioned why the source inspection was only applied to ASME Code orders. The licensee responded that ASME Code orders are the only ones for which problems were detected during receipt inspection. The licensee attributed this to the fact that CE was placing suppliers of ASME Code items on their approved supplier list solely on the basis of the suppliers' ASME certificate. Combustion Engineering was not verifying that the suppliers had a quality assurance (QA) program to control characteristics not covered by the ASME Code, (e.g., dimensions, non-pressure boundary parts) or performing inspections to verify the items supplied met all requirements. The company has since modified their QA program to include tests and inspections to cover characteristics not controlled by the ASME Code.

The inspector noted that the NRC has issued three information notices (IN) that addressed issues similar to those surfaced with CE as above: IN 90-03, "Malfunction of Borg-Warner Bolted Bonnet Check Valves Caused By Failure Of The Swing Arm," IN 88-95, "Inadequate

Procurement Requirements Imposed By Licensees On Vendors," and IN 88-35, "Inadequate Licensee Performed Vendor Audits." The inspector reviewed the licensee's actions taken following receipt of the INs. Each IN was assigned to an individual for review and the need for a response was placed in a tracking system.

The licensee concluded that no action was necessary in response to IN 90-03 because none of the Millstone units had Borg-Warner valves. The licensee did not recognize or address the generic issue raised by the IN concerning the effectiveness of the qualification and oversight of vendors by licensees.

In response to IN 88-95 the licensee concluded that revisions being prepared for two procedures would address the issues raised by the IN. The two procedures being revised addressed the preparation and review of purchase requisitions and the use of commercial grade items in safety related applications. The issue of the qualification and oversight of vendors, which was also raised by the IN, was not addressed by the licensee.

Actions taken in response to IN 88-35 were documented in a memorandum issued in September 1988 that gave a very positive assessment of the licensee's vendor audit process. There was no indication the licensee's review process determined if the problems identified by the IN had or could occur under the licensee's program.

In August 1992, the licensee modified the checklist used to perform audits of vendors to include verification that vendors assure that their sub-suppliers control important attributes for the items supplied. Combustion Engineering had been audited in 1987 and was not due to be audited again until 1990. The inspector observed that if the licensee had fully used the information supplied by the INs to assess their vendor audit programs at the time the INs were issued, that would not have affected this event because of the delay between the notifications and the next triennial audit. However, if the licensee factored the information from the INs into the annual assessment of vendors, the fact that CE's program for controlling sub-suppliers was not adequate may have been discovered prior to the receipt inspection of the reactor head studs.

Based on the changes the licensee recently made to their program for auditing vendors, the inspector had no further questions concerning the program for procuring material or monitoring vendor performance.

7.4 Followup of Previous Inspection Items

7.4.1 Effectiveness of Licensee Receipt Inspection Program

Unresolved item (245/92-12-01) involves three issues: commercial grade electrical connectors installed in nuclear instrumentation, nonconforming commercial grade fasteners accepted by Stone & Webster (SWEC) and transferred to Millstone stores, and a programmatic issue concerning the effectiveness of SWEC's and the licensee's receipt

inspection programs. The inspector reviewed and updated the status of all three issues during this inspection.

Stone & Webster Fastener Materials - Unit 3

An update of the licensee's efforts to resolve the SWEC fastener issue was previously provided in NRC inspection report 50-423/92-16. As noted in that report, the licensee had selected a total of 90 fasteners for tensile testing; 30 from each of the three manufacturers that supplied fasteners. The sample included fasteners with porosity, linear indications, oversized heads, and undercut. During this inspection, the inspector reviewed the test results. With the exception of one cap screw, all of the fasteners tested had acceptable test results. One cap screw manufactured by Bethlehem Steel, identified by the manufacturer's mark BS, only had a tensile strength of 121.3 ksi, compared to a specified minimum of 125 ksi. However, the cap screw did have an acceptable yield strength and when pulled to failure; it failed in the threaded portion, the portion of the fastener expected to fail. Based on these results, the licensee concluded that the nonconforming conditions have not adversely affected the ability of the fasteners to perform their function. The licensee initially stated that the remaining fasteners that were transferred from SWEC to Millstone stores would be scrapped. However, due to ongoing maintenance, the licensee did install some of the fasteners in the units after performing additional inspections and dedicating the fasteners prior to installation. This portion of the unresolved item is considered closed.

Nuclear Instrumentation Electrical Connectors

As noted in NRC inspection report 50-245/92-12, a procurement engineer preparing to order electrical connectors for nuclear instrumentation from General Electric (GE) noted that on the previous order GE had supplied commercial grade connectors when safety-related connectors had been specified. Based on this discovery, the licensee initiated plant incident report (PIR) 1-92-052 to document the problem and initiate a review to determine the cause of this error. To characterize the extent of the problem, the licensee reviewed documentation for purchase orders issued for safety-related items during the 1988 - 1989 time frame, including purchase orders issued to GE. For the GE purchase orders, the licensee limited the scope of the review based on changes in the licensee's program during 1989 and changes GE made in 1989 to their program for handling discrepancies between the purchase order and the items being supplied. In addition, as reported in the inspection report referenced above, the inspector reviewed eight purchase orders from the 1988 - 1989 time frame and found an example of GE supplying commercial grade electrical connectors when safety-related connectors were ordered; this was not identified previously by the licensee.

The licensee's review of the documentation on purchase order 116668 showed that the electrical connectors had been ordered from GE as safety-related for use in nuclear instrumentation. General Electric ordered the connectors from Reuter-Stokes, a subsidiary of GE. The parts were received by the licensee with certificates of conformance that stated that the supplied products were supplied in conformance with the purchase order quality

requirements. At receipt inspection, the licensee identified that the part numbers on the connectors did not match those ordered and issued a nonconformance report (NCR) on December 6, 1988. In response to the NCR, on December 14, 1988, GE sent a facsimile of a memorandum dated November 18, 1988, (previously sent to the purchasing department supervisor at Millstone) that stated that the part numbers had been changed and that the parts provided had the same fit, form, and function as the original parts. Based on the information contained in the facsimile from GE, the licensee accepted the parts.

However, during the review of the facsimile the licensee failed to notice that the November 18, 1988, memo included a statement that Reuter-Stokes needed to know the system where the parts were to be used to assure that the parts were suitable for the application. In addition, the memo also stated that the quotation for the parts was for an unspecified nonsafety-related application.

When the problem was brought to GE's attention in March 1992, GE performed a 10 CFR Part 21 reportability evaluation for the connectors. This evaluation concluded that the problem was not reportable. Their conclusion was based on reviewing the failure modes and concluding that either the failure was in the safe direction or that the failure was very unlikely given the actual system conditions where the parts were installed. Based on the information provided by GE, the licensee concluded that the installed connectors were acceptable. General Electric did conclude that it was an error on their part to complete the order without resolving the discrepancy between the stated request for safety-related connectors and the listing of a nonsafety-related part number in the purchase order. As corrective action, GE instructed their employees to resolve all customer purchase order discrepancies prior to filling the order. In addition, Reuter-Stokes has since revised their certificates of conformance to more clearly note whether the material being supplied is safety-related.

To date the licensee has not determined why engineering personnel were not initially aware of the November 18, 1988, memo informing Millstone that the parts ordered were nonsafety-related prior to the parts being receipt inspected on December 6, 1988. The licensee has also not determined why engineering did not recognize that the parts supplied were nonsafety-related when engineering used the memo as the basis to disposition the parts as use-as-is on December 14, 1988. The licensee's review of this issue is ongoing and has been referred to the Project Services Division for an independent assessment of the root cause of the problem.

This portion of the unresolved item remains open pending NRC evaluation of the licensee's review and corrective action.

Programmatic Receipt Inspection Issues

As a result of the questions raised concerning the effectiveness of the licensee's and SWEC's receipt inspection programs discussed above, the licensee initiated a corrective action request (CAR) 92-04. The purpose of the CAR was to provide reasonable assurance that SWEC's

quality assurance program for Category I, non-engineered items identified nonconforming items and prevented their installation in Unit 3.

To accomplish this, the licensee reviewed SWEC's program for establishing purchase order and receipt inspection requirements. The licensee concluded that appropriate procedures existed to assure the quality of Category I, non-engineered items. To review the implementation of the procedures, the licensee reviewed approximately 4,500 receipt inspection reports (RIR) and selected about 1,000 of these that identified nonconforming conditions for detailed review. From this review, the licensee concluded that SWEC's program was effective in assuring the quality of Category I, non-engineered items and closed the CAR on August 24, 1992.

The inspector reviewed the licensee's analysis and a portion of the background information on which the analysis was based. The background information was segregated by the basic specification under which the item was procured. The inspector reviewed the background information associated with the specifications for installation of electrical items (E350), erection and installation of piping (M968), and instrumentation installation (I943). In addition to the information reviewed by the licensee, the inspector also reviewed the requirements for Category I, non-engineered items in each of the basic specifications mentioned above.

The inspector reviewed 19 RIRs from the background information for items purchased under the electrical installation specification. Thirteen of the RIRs were for fasteners, one was for terminal blocks, and five were for support parts and materials. Several inconsistencies between RIRs for similar items and between the RIRs and the specification requirements were noted. The electrical installation specification required that fasteners purchased as Category I, non-engineered were inspected upon receipt for manufacturing imperfections. The inspector believed that the attribute from Quality Assurance Directive (QAD) 7.7, "Receiving Inspection - General," that covers manufacturing imperfections is fabrication. Of the thirteen RIRs for fasteners, three included the fabrication inspection attribute and ten did not.

Specification E350 requires that the receipt inspection for terminal blocks include a random check to verify proper sizes, lengths, and compatibility. In addition, for terminal blocks subject to radiation, the block insulation material is required to be polysulfone produced by a specific company. The RIR included the attributes of manufacturer's documentation, damage, marking, and cleanliness. The RIR did not include dimensions, fabrication, or material properties.

The inspector reviewed eight RIRs from the background information for items purchased under the piping installation specification. Two of the RIRs were for Category I, Engineered items rather than Category I, non-engineered items. The remaining six RIRs were for items purchased to the quality requirements of Appendix B or Section III of the ASME Boiler and

Pressure Vessel Code. No discrepancies were noted in these RIRs, although it should be noted that the two RIRs for Category I, Engineered should not have been included in the review.

The inspector reviewed five RIRs from the background information for items purchased under the instrumentation installation specification. Three of the RIRs were for fasteners, one was for tubing, and the other was for tube clamps. One of the RIRs for zinc plated fasteners did not include the attribute for coating/preservatives, which should have been inspected according to QAD 7.7. The other RIRs correctly reflected the specification requirements.

With the exception of the discrepant bolts addressed above, there have been no other accepted non-engineered items which have subsequently been found to be non-conforming. Therefore, it appeared that the SWEC receipt inspections had been effective. However, the inspector was concerned that the receipt inspections may not have inspected all the required attributes. Additionally, the inspector concluded that the licensee closed the CAR without adequate justification that the SWEC receipt inspections had been conducted in accordance with QA program requirements.

Licensee review of these concerns identified that SWEC receipt inspections for non-engineered items relied heavily on the experience of the inspector and did not strictly follow QAD 7.7. Specifically, the receipt inspector would decide what needed to be inspected by review of procurement documents. He conducted the inspections and documented the results on a generic checklist. Therefore, any required attribute could have been inspected and documented in another attribute of the inspector's choice.

The SWEC program was not consistent in documenting inspection attributes reviewed and may not always have assured that all inspection requirements delineated in the basic specifications were included in the receipt inspections. However, the licensee's current receipt inspection program is deliberate and controlled, and consistent in the choice of required attributes and the documentation of the result. Since there have been no unacceptable SWEC parts identified in use in the field, the inspector had no further questions in this area. This portion of the unresolved item is closed.

7.4.2 Technical Specification Violations Involving Containment Integrity and Safety System Operability - Unit 2

The first violation (336/90-22-01) involved two failures to maintain containment integrity during fuel movement. The first incident occurred when a supervisory control operator opened a steam generator atmospheric dump valve while a steam drum manway was open, thus creating a direct path from the containment to the atmosphere. The valve was opened in spite of a procedure cautionary note and valve tagging instructions. The second incident occurred when containment purge system valves were opened without automatic isolation

Docket Nos. 50-245
50-336
50-423

JAN 14 1994

Mr. John F. Opeka
Executive Vice President - Nuclear
Northeast Nuclear Energy Company
P. O. Box 270
Hartford, Connecticut 06141-0270

Dear Mr. Opeka:

SUBJECT: COMBINED INSPECTION REPORT NOS. 50-245/93-29; 50-336/93-24;
AND 50-423/93-26

This refers to the announced safety inspection of procurement activities conducted by Mr. A. Finkel of this office from December 13-17, 1993, at the Millstone Nuclear Power Plant, Units 1, 2 and 3, at Waterford, Connecticut, of activities authorized by NRC License Nos. DPR-21, DPR-65 and NPF-49 and to the discussions of our findings held by Mr. A. Finkel with Mr. D. Miller, Jr. of your staff on December 17, 1993, at the conclusion of this inspection.

Areas examined during this inspection are described in the NRC Region I inspection report, which is enclosed with this letter. Within these areas, the inspection consisted of selective examinations of procedures, reports and records, personnel interviews and observations by the inspector.

Within the scope of this inspection, no issues affecting public health and safety, nor any violations of NRC requirements were observed.

No reply to this letter is required. Your cooperation with us in this matter is appreciated.

Sincerely,

Jacque P. Durr, Chief
Engineering Branch
Division of Reactor Safety

Enclosure: NRC Inspection Report Nos. 50-245/93-29, 50-336/93-24 and 50-423/93-26

~~9/10/310029~~

Northeast Nuclear Energy
Company

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cc w/encl:

S. E. Scace, Vice President, Nuclear Operations Services
D. B. Miller, Senior Vice President, Millstone Station
J. P. Stetz, Vice President, Haddam Neck Plant
H. F. Haynes, Nuclear Unit 1 Director
G. H. Bouchard, Nuclear Unit 2 Director
F. R. Dacimo, Nuclear Unit 3 Director
R. M. Kacich, Director, Nuclear Planning, Licensing, and Budgeting
J. Solymossy, Director, Nuclear Quality and Assessment Services
Gerald Garfield, Esquire
Nicholas Reynolds, Esquire
K. Abraham, PAO (2)
Public Document Room (PDR)
Local Public Document Room (LPDR)
Nuclear Safety Information Center (NSIC)
NRC Resident Inspector
State of Connecticut SLO

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

DOCKET/REPORT NOS: 50-245/93-29
50-336/93-24
50-423/93-26

LICENSE NOS: DPR-21
DPR-65
NPF-49


LICENSEE: Northeast Nuclear Energy Company
P. O. Box 270
Hartford, Connecticut 06141-0270

FACILITY NAME: Millstone Nuclear Power Plant, Units 1, 2 and 3

INSPECTION AT: Waterford, Connecticut

INSPECTION DATES: December 13-17, 1993

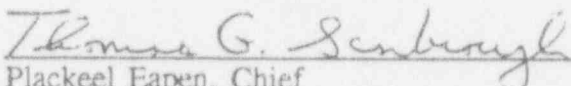
INSPECTOR:



Alan Finkel, Senior Reactor Engineer
Systems Section, EB, DRS

12/23/93
Date

APPROVED BY:


for Thomas G. Sembergh
Plackeel Eapen, Chief
Systems Section, EB, DRS

1/5/94
Date

~~9401310030~~

Inspection Summary: Inspection from December 13-17, 1993 (Inspection Report Nos. 50-245/93-29, 50-336/93-24 and 50-423/93-26).

Areas Inspected: This was an announced safety inspection by one region-based inspector to review the procurement program and the implementing documents associated with this program. The major areas of the procurement program that the inspector reviewed were the Procurement Program Plan, Audit Program and Reports, Approved Supplier Program and Reports, Procurement Training Program for Procurement Engineering, Receiving, Receiving Inspection and Warehouse personnel, and Warehouse Storage and Stock Control Programs.

Results: No safety issues were identified during this inspection. The Procurement Program was implemented as described in site procedures and complied with NUQAR, Revision 16, approved by the NRC on October 7, 1993. The Procurement Engineering staff has been trained on program requirements with increased training in the areas of parts/materials dedication, root-cause analysis and parts dedication. An approved Vendor Supplier List is issued and maintained current. Warehouse personnel have received training for their task assignments which has improved the storage and cleanliness of items in the warehouse areas. Quality Assurance audits of the procurement program were performed as defined in their Procurement Program Plan. Audit findings are tracked in a site tracking system that is monitored by management. A review of Procurement open findings indicate that they are being resolved in a timely manner.

DETAILS

1.0 INSPECTION SCOPE (38701)¹

The inspector evaluated the implementation of the procurement program for the Millstone site as described in the documentation listed in Attachment 2 of this report. In addition, the inspector reviewed the site Procurement Program for compliance with the Millstone Northeast Utilities Quality Assurance Topical Report (NUQAR); ANSI N45.2.2-1972, "Quality Assurance Requirements for Packaging, Shipping, Receiving, Storage and Handling of Items for Water-Cooled Nuclear Power Plants;" ANSI N45.2.3-1973, "Housekeeping Requirements for Water-Cooled Nuclear Power Plants;" ANSI N45.2.13-1976, "Quality Assurance Requirements for Control of Procurement of Items and Services for Nuclear Power Plants;" and 10 CFR 21, "Reporting of Defects and Noncompliance."

1.2 Procurement Program

The Millstone site procurement program is described in Nuclear Engineering and Operations Procedure (NEO) 6.01, "Material, Equipment, and Parts Lists for In-Service Nuclear Generation Facilities." This procedure describes the Millstone site program for the procurement and accountability of site procured items (except Nuclear Fuel) including off-site equipment repair and calibration services for use at this site. During this inspection, the inspector used Procedure NEO 6.01 and the documents listed in Attachment 2 to review and evaluate the implementation and effectiveness of the site procurement program. The following elements of the site procurement program were inspected by the inspector:

- Procurement Engineering
- Warehouse Storage and Stock Control
- Supplier Audit Program
- Quality Procurement Audits
- Nuclear Records Retention

1.3 Procurement Engineering

The Procurement Engineering (PE) organization is responsible for ensuring that replacement parts and materials are evaluated so that the use of these replacement items does not degrade the operation or function of the original design safety systems or equipment. The PE requirements for using commercial grade items are described as when a replacement part or material can no longer be purchased from a supplier qualified to the requirements of 10 CFR 50, Appendix B. The Millstone site program for parts and material dedication is described in Procedure NEO 6.11, "Commercial Grade Items." To determine the acceptability of a commercial grade item, the PE completes an engineering evaluation form

¹The parenthetical notation following the paragraph title denotes the NRC inspection procedure that was used by the inspector in conducting this inspection. The procedure title is "Procedure Program."

that considers such areas as traceability, shelf life application, safety function, equipment qualification (EQ) and seismic requirements, and materials. To determine if the Procurement Engineers were performing evaluations on the items approved for dedication, the inspector selected the following approved commercial grade dedication packages for review:

- MPS-93-0156 - Temperature Sensor
- MP1-93-0180 - Electrical Fuses
- MPS-93-0204 - 15A 400V Transistor
- MP2-93-0113 - 1" Ball Valve

In each of the above commercial grade dedication packages reviewed, the inspector verified that the supporting documentation was complete and complied with the requirements of Millstone Procedure NEO 6.11. The inspector also verified that the engineering selection of the part loading requirements, in the above dedication packages, complied with the item location within the system.

The inspector also reviewed the Procurement Engineering program for the investigation of "Counterfeit Parts." During the dedication process of a horizontal centrifugal pump bearing part listed as a "Maximum" Bearing (Report No. PM-1300) and a Westinghouse breaker Part No. EHB3100 (Report No. PM-1291), the PE suspected from the appearance of the items that they may be counterfeit. An investigation was performed with the results indicating that the items were not counterfeit; however, both items were manufactured by an approved licensed third party company which accounted for the appearance difference for the original item. The inspector verified that the requirements of Procedures NEO 5.05, "Design Reviews," NEO 6.11, "Commercial Grade Items," and NEO 6.12, "Evaluation of a Replacement Item," were implemented by the PE during its evaluations of the suspected counterfeit items. The inspector's review of the results of the PE documentation confirmed that the items were not counterfeit.

1.4 Warehouse Storage and Stock Control

During a tour of the warehouse and receiving areas, the inspector noted that (1) the area was clean, (2) parts and materials were protected, (3) shelf life requirements were identified, and (4) cabinets for storing hazardous materials were located throughout the areas. Both the receiving and receiving inspection personnel were knowledgeable of the purchase order (PO) program requirements for receiving and storage. Warehouse personnel have had training for handling chemical-based materials and they understood the storage requirements for these materials. The inspector's review of the Quality Service Department (QSD) receiving inspection personnel training history and records indicated that their scheduled 1993 training has been completed. The inspector also verified that required test equipment, gage blocks and other equipment used as laboratory standards were traceable to an approved standards laboratory. The inspector selected five POs that were in the process of being inspected by

receiving inspection personnel. The inspector noted that connectors, inspection ports and threaded ends of bolts were protected before leaving the receiving inspection area. The shelf life requirements were marked on the item tags per the requirements of Procedure NEO 6.14, "Shelf Life."

1.5 Supplier Audit Program

The Millstone site Supplier Audit program is described in Procedure NEO-3.14, "Performance Based Supplier Audits." This procedure describes the requirements for planning and conducting supplier audits, establishing the Approved Supplier List (ASL), and initiation and follow-up of issued corrective action findings identified during an audit. The Procurement Vendor Services (PVS) organization is responsible for establishing, implementing and maintaining the Millstone site ASL program. The PVS Supplier Audit Program consists of a combination of licensee's scheduled supplier audits and audits that are received as part of the licensee's participation in the industry-wide utility program called NUPIC. The inspector verified that the approved supplier listing, which is a computer-based program, is maintained on a regularly scheduled time frame and that updated information can be added to the ASL on a daily basis, if required. The licensee performs both an annual and a triennial inspection based on site requirements. The PVS audit personnel are certified in accordance with the requirements of Regulatory Guide 1.146 (August 1980), "Qualification of Quality Assurance Program Audit Personnel for Nuclear Power Plants," which endorses ANSI N45.2.23-1978. The inspector selected ten safety-related POs and verified that the suppliers listed on the POs were on the Approved Supplier List. The inspector also verified that the ASL was being updated by PVS personnel.

1.6 Quality Procurement Audits

A Quality Service Department (QSD) audit (No. A60524) of the Millstone site Material Control program was completed on July 13, 1993. The audit was performed in the following areas:

- Replacement Item Evaluations
- Testing of Commercial Grade Items
- Nuclear Production Materials Periodic Storage Inspection Program

The audit report had three findings and three recommendations. The findings were addressed by the responsible organization in a timely manner with positive actions taken to correct the findings. The inspector's tour of the warehouse area, as described in paragraph 1.4, concurred with the audit team's findings, in that the warehouse areas were clean and well maintained. Also, parts and materials were stored and protected as required by the purchase orders.

The Millstone site warehouse is scheduled for a modification which will provide additional space for receiving inspection and warehouse storage areas.

1.7 Nuclear Records Retention

Nuclear records are maintained in accordance with the requirements described in NUQAR, Revision 16. This document describes the requirements for collecting, filing, storage, maintenance and deposition of records that are required to be maintained by the licensee's Technical Specification. The inspector reviewed the procurement records of the packages described in paragraph 1.3, which were closed in a timely manner. The data within the packages were signed, legible and complied with the program requirement for record documentation retention.

2.0 CONCLUSION

The inspector determined that the procurement program for the Millstone site is implemented as described in the Technical Specifications, NUQAP (Revision 16) and site procedures. The Procurement Engineering evaluations in support of the site procurement program are well defined and documented. The Quality and Assessment Services Department program, in support of the procurement program, is defined and documented. The licensee has made improvements in the warehouse facility, and the increased training of both procurement engineering and warehouse personnel is proceeding on schedule. No safety issues were identified during this inspection.

3.0 MANAGEMENT MEETINGS

Licensee management was informed of the scope and purpose of the inspection at an entrance meeting conducted on December 14, 1993. The findings of the inspection were periodically discussed with licensee personnel during the course of this inspection. The inspector met with the licensee representatives (denoted in Attachment 1) at the conclusion of the inspection on December 17, 1993. The inspector summarized the scope and findings of the inspection as described in this report.

ATTACHMENT 1

Persons Contacted

Northeast Nuclear Energy Company

- * M. Ahern, Manager, Design Engineering, Millstone Unit 2
- * R. Asafaylo, Manager, Procurement Engineering
- * L. Bigalbal, Licensing Engineering
- * A. Brucknen, Supervisor, Warehouse Services, Millstone
- * J. Coleman, Supervisor, Procurement Inspection Services
- * R. Griswold, Operational Material Control Supervisor
- * D. Harris, Licensing Engineer
- * F. Libby, Jr., Supervisor, Assessment Services
- * D. McCory, Manager, Procurement Quality Services
- * A. McKissick, Manager, Nuclear Products Materials
- * G. McNatt, Supervisor, Procurement Engineering
- * D. Miller, Jr., Senior Vice President

United States Nuclear Regulatory Commission

- * P. K. Eapen, Chief, Systems Section, EB

* Denotes those personnel present at the exit meeting held on December 17, 1993.

During the course of this inspection, the inspector contacted other members of the licensee's Technical, Maintenance, Engineering and Quality Services staff.

ATTACHMENT 2

Documentation Reviewed

Nuclear Engineering and Operations Procedures (NEO's)

- NEO-3.14, Performance Based Supplier Audits
- NEO-5.05, Design Reviews
- NEO-6.01, Material, Equipment, and Parts Lists for In-Service Nuclear Generation Facilities
- NEO-6.11, Commercial Grade Parts
- NEO-6.12, Evaluation of a Replacement Item
- NEO-6.14, Shelf Life

Licensee Documentation

- NUQAR, Northeast Utilities Quality Assurance Topical Report, Revision 16
- ANSI N45.2.2-1972, Quality Assurance Requirements for Packaging, Shipping, Receiving, Storage and Handling of Items for Water-Cooled Nuclear Power Plants
- ANSI N45.2.3-1973, Housekeeping Requirements for Water-Cooled Nuclear Power Plants
- ANSI N45.2.13-1976, Quality Assurance Requirements for Control of Procurement of Items and Services for Nuclear Power Plants
- 10 CFR 21, Reporting of Defects and Noncompliance
- Regulatory Guide 1.146 (1980), Qualification of Quality Assurance Program Audit Personnel for Nuclear Power Plants, which endorses ANSI N45.2.23-1978

Miscellaneous Documents

- Commercial Grade Dedication Documents: MPS-93-0156-Temperature Sensor, MPS-93-0204-15A 400V Transistor, MP1-93-0180-Electrical Fuses, and MP2-93-0113-1" Ball Valve
- PM1291-Counterfeit Report- Westinghouse Breakers EHB3100
- PM1300-Counterfeit Report- Maximum Type Bearing
- Audit Report No. A60524, Millstone site Material Control Program
- ACP-QA-4.04, Instruction for Packaging, Shipping, Receiving, and Handling
- NCR-1-93-068, Maintenance Storage Not In Compliance With Site Requirements

ADD 2 2 1994

EA No. 94-045
 Docket Nos. 50-245
 50-336
 50-423

Mr. John F. Opeka
 Executive Vice President-Nuclear
 Northeast Nuclear Energy Company
 P.O. Box 270
 Hartford, Connecticut 06141-0270

Dear Mr. Opeka:

SUBJECT: MILLSTONE COMBINED INSPECTION 50-245/94-01; 50-336/94-01;
 50-423/94-01

This refers to the safety inspection conducted by Mr. P. Swetland and others of this office on January 5, 1994 through February 22, 1994, at Millstone Station in Waterford, Connecticut. The preliminary findings were discussed with Mr. D. Miller, Unit Directors, and others of your staff at the conclusion of the inspection. Areas examined during the inspection are described in the enclosed report. Within these areas, the inspection focused on issues important to public health and safety, and consisted of performance observations of ongoing activities, independent verification of safety system status and design configuration, interviews with personnel, and review of quality records.

During this inspection period, several activities at Units 1 and 2 were not conducted in accordance with your license requirements. These activities included: (1) inadequate local storage of Unit 1 safety-related spare components, (2) untimely corrective action for Unit 2 vital inverter power supply problems, (3) failure to notify operators of Unit 2 equipment removed from service for maintenance, (4) inadequate design verification of the suitability of Unit 2 replacement parts, (5) failure to complete Unit 2 technical specification action statements within the allowed outage time and (6) inadequate surveillance test procedure for the Unit 1 standby gas treatment system. The latter licensed-identified violation was cited due to the lack of timely, comprehensive corrective actions to prevent repetition.

Based on the results of this inspection, two apparent violations were identified and are being considered for escalated enforcement action in accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions" (Enforcement Policy), 10 CFR Part 2, Appendix C (1993). The apparent violations involved the inability of the Unit 1 reactor water cleanup system to automatically isolate in response to a pipe break in the reactor building, and the recurring discrepancies identified in the quality of your high energy line break analysis conducted in 1972.

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JEC

APR 22 1994

Mr. John F. Opeka

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An enforcement conference to discuss these apparent violations will be scheduled in the near future. The purposes of this conference are to discuss the apparent violations, their causes and safety significance; to provide you the opportunity to point out any apparent errors in our inspection report; and to provide an opportunity for you to present your proposed corrective actions. In addition, this is an opportunity for you to provide any information concerning your perspective on (1) the severity of the issue, (2) the factors that the NRC considers when it determines the amount of a civil penalty that may be assessed in accordance with Section VI.B.2 of the Enforcement Policy, and (3) the possible basis for exercising discretion in accordance with Section VII of the Enforcement Policy. You will be advised by separate correspondence of the results of our deliberations on this matter. No response regarding the apparent violations is required at this time.

You are required to respond to the enclosed Notice of Violation and should follow the instructions in the enclosed Notice when preparing your response. With regard to Item F of the Notice, no further response is required because your corrective actions were completed and verified by the NRC during the inspection. In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and the enclosed Notice will be placed in the NRC Public Document Room. The responses directed therein are not subject to the clearance procedures of the Office of Management and Budget as required by the Paperwork Reduction Act of 1980, Public Law 96.511.

During this inspection, we also evaluated your identification and correction of fourteen problems/discrepancies among the three Millstone units. We determined that your corrective actions for these issues were acceptable and that the specific problems had minimal safety consequences. In accordance with Section VII.B of the NRC Enforcement Policy, enforcement discretion was exercised and violations were not cited for these cases. While the result of our review revealed that your process for identification and correction of problems is working on a case specific basis, the growing number of issues to be corrected indicates the need for continued management attention to the root cause of these issues.

We appreciate your cooperation.

Sincerely,

Original Signed By:

Wayne D. Lanning, Acting Director
Division of Reactor Projects

Enclosures:

1. Notice of Violation
2. NRC Combined Inspection Report 50-245/94-01; 50-336/94-01;
50-423/94-01

APR 22 1994

Mr. John F. Opeka

3

cc w/encls:

D. B. Miller, Senior Vice President, Millstone Station

S. E. Scace, Vice President, Nuclear, Operations Services

H. F. Haynes, Nuclear Unit Director, Unit 1

G. H. Bouchard, Nuclear Unit Director, Unit 2

F. R. Dacimo, Nuclear Unit Director, Unit 3

R. M. Kacich, Director, Nuclear Planning, Licensing, and Budgeting

J. M. Solymossy, Director of Nuclear Quality and Assessment Services

Gerald Garfield, Esquire

Nicholas Reynolds, Esquire

K. Abraham, PAO (2)

Public Document Room (PDR)

Local Public Document Room (LPDR)

Nuclear Safety Information Center (NSIC)

NRC Resident Inspector

State of Connecticut SLO

**ENCLOSURE 1
NOTICE OF VIOLATION**

Northeast Nuclear Energy Company
Millstone Nuclear Power Station
Units 1 and 2

Docket No.: 50-245; 50-336
License No.: DPR-21; DPR-65

During an NRC inspection conducted on January 5, 1994 through February 22, 1994, violations of NRC requirements were identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," 10 CFR Part 2, Appendix C, the violations are listed below:

- A. 10 CFR 50 Appendix B, Criterion XIII, Handling, Storage and Shipping, requires that measures shall be established to control the..storage..of material and equipment in accordance with ..instructions to prevent damage or deterioration. When necessary for particular products special protective environments...shall be specified." Northeast Utilities Quality Assurance Topical Report, Appendix D, commits to ANSI Standard 45.2.2 - 1972, "...Storage and Handling of Items for Nuclear Power Plants." ANSI 45.2.2 - 1972, Paragraph 2.7.2, states in part that items requiring Level B storage require measures for protection from the effects of temperature extremes, humidity and vapors, acceleration forces, physical damage and airborne contamination.

Pursuant to the above, Administrative Control Procedure, ACP-QA-4.04, "Instructions for Packaging, Shipping, Receiving, Storage and Handling," requires Level B materials to be stored in secure, environmentally protected areas.

Contrary to the above, on September 7, 1993 and January 21, 1994, respectively, three safety related 4160 volt circuit breakers and several stainless steel globe valves that were specified as requiring Level B storage were found not stored in secure, environmentally protected Level B storage areas. These items were improperly stored for at least several days.

This is a Severity Level IV violation (Supplement I).

- B. 10 CFR Part 50 Appendix B, Criterion XVI requires that measures shall be established to assure that conditions adverse to quality are promptly identified and corrected. In the case of significant conditions adverse to quality, the measures shall assure that the cause of the condition is determined and corrective action taken to preclude repetition.

Contrary to the above, from approximately February 6 to February 18, vital inverter #1 was not capable of automatically transferring to its alternate power supply at all times. Vital inverter #3 was similarly affected from January 28 to February 19, 1994. These significant conditions adverse to quality were not corrected until the inability of inverter #1 to automatically transfer to its alternate source was recognized as an operationally limiting condition on February 18, 1994.

This is a Severity Level IV Violation (Supplement I).

- C. Millstone Unit 2 Technical Specification 6.8.1 requires that procedures covering station activities be established and implemented. Station administrative procedure ACP-QA-2.02C, "Work Orders," was established pursuant to the above.

Procedure ACP-QA-2.02C, Section 5.10.1 requires, in part, that the Operations Work Control (OWC) Supervisor shall inform the Shift Supervisor (SS)/Shift Control Operator (SCO) of all work released.

Contrary to the above, on January 18, 1994, the OWC supervisor did not inform the SS/SCO that the facility 2 control room air conditioning unit had been released for corrective maintenance under authorized work order M2-94-00590. Consequently, the operating shift did not know the unit was out of service and that a limiting condition for operation applied with one of two independent control room emergency ventilation systems inoperable.

This is a Severity Level IV Violation (Supplement I).

- D. 10 CFR Part 50, Appendix B, Criterion III, "Design Control," requires that measures shall be established for the selection and review for suitability of the application of parts that are essential to the safety-related functions of the components. The design control measures shall provide for verifying or checking the adequacy of design.

Contrary to the above, the measures established for review for suitability of the application of replacement solenoid operated valves used in the safety-related emergency diesel generator starting air systems were not adequate, as evidenced by the following examples:

1. The design review for suitability performed in February 1988 for the replacement of valve 2-DG-95B did not verify incorrect vendor information used in lieu of valve name plate data and the emergency diesel generator seismic design specification. Consequently, a valve which did not meet the system design criteria was installed from February 1988 until October 8, 1993.

2. The design review for suitability performed on October 8, 1993, for the replacement of valve 2-DG-95B did not verify vendor information used in lieu of the emergency diesel seismic design specification. Consequently, the valve installed on October 8, 1993 had not been shown to adequately meet the system design criteria.
3. The design reviews for suitability performed for the replacement in 1985 of valve 2-DG-96A, and in 1986 of valve 2-DG-96B, did not verify the vendor information used in lieu of the emergency diesel generator seismic design specification. Consequently, the valves had not been verified to adequately meet the system design criteria.

This is a Severity Level IV Violation (Supplement I)

- E. Millstone Unit 2 Technical Specification (TS) 3.7.1.1, "Turbine Cycle - Safety Valves," which applies in operating modes one through three, requires that with one or more main steam line code safety valves (MSSV) inoperable, either restore the inoperable valve(s) to operable status or reduce the power level high trip setpoint within four hours. Otherwise, the plant must be placed in at least hot standby within the next six hours and in cold shutdown within the following 30 hours.

Contrary to the above, from May 31, 1992, at 6:50 p.m. until June 1, 1992, at 4:18 a.m., with one or more MSSV inoperable and without reducing the power level high trip setpoint, the plant was not placed in cold shutdown within 40 hours.

This is a Severity Level IV Violation. (Supplement I)

- F. Millstone Unit 1 Technical Specification 4.7.b.3.c requires that when one circuit of the standby gas treatment system becomes inoperable, the other circuit shall be demonstrated to be operable immediately and daily thereafter.

Contrary to the above, on November 11, 1993, with Unit 1 operating at 100 percent power and one circuit of the standby gas treatment system inoperable, the surveillance testing immediately to demonstrate the operability of the other circuit was inadequately performed. Specifically, surveillance procedure SP 646.6, "Functional Test When One Circuit of the Standby Gas Treatment Becomes Inoperable," which was the only test performed, was not conducted at the design flow rate of 1100 scfm and did not verify the functionality of the 5 KW relative humidity heaters.

This is a Severity Level IV Violation (Supplement I). No response is required.

Pursuant to the provisions of 10 CFR 2.201, Northeast Nuclear Energy Company is hereby required to submit a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D.C. 20555 with a copy to the

Regional Administrator, Region I, and if applicable, a copy to the NRC Resident Inspector within 30 days of the date of the letter transmitting this Notice of Violation (Notice). This reply should be clearly marked as a "Reply to a Notice of Violation" and should include for each violation: (1) the reason for the violation, or, if contested, the basis for disputing the violation, (2) the corrective steps that have been taken and the results achieved, (3) the corrective steps that will be taken to avoid further violations, and (4) the date when full compliance will be achieved. Where good cause is shown, consideration will be given to extending the response time.

Dated at King of Prussia, PA
this 21st day of APRIL, 1994

**U.S. NUCLEAR REGULATORY COMMISSION
REGION I**

Docket Nos.:	50-245	50-336	50-423
Report Nos.:	94-01	94-01	94-01
License Nos.:	DPR-21	DPR-65	NPF-49

Licensee: Northeast Nuclear Energy Company
P. O. Box 270
Hartford, CT 06141-0270

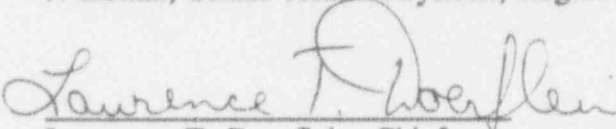
Facility: Millstone Nuclear Power Station, Units 1, 2, and 3

Inspection at: Waterford, CT

Dates: January 5, 1994 - February 22, 1994

Inspectors: P. D. Swetland, Senior Resident Inspector, Millstone
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R. J. DeLaEspriella, Resident Inspector, Unit 2
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D. A. Dempsey, Resident Inspector
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N. J. Blumberg, Project Engineer, Region I
J. Kottan, Senior Health Physicist, Region I

Approved by:

 4/18/94
Lawrence T. Doerflein, Chief Date
Reactor Projects Section No. 4A

Scope: NRC resident inspection of core activities in the areas of plant operations, radiological controls, maintenance, surveillance, security, outage activities, licensee self-assessment, and periodic reports.

The inspectors reviewed plant operations during periods of backshifts (evening shifts) and deep backshifts (weekends, holidays, and midnight shifts). Coverage was provided for 152 hours during evening backshifts and 40 hours during deep backshifts.

Results: See Executive Summary

EXECUTIVE SUMMARY
Millstone Nuclear Power Station
Combined Inspection 245/94-01; 336/94-01; 423/94-01

EXECUTIVE SUMMARY

Plant Operations

Unit 1 began the reporting period at approximately 93%, coasting down in power as its fuel depleted. On January 14, 1994, the plant was shutdown to begin the cycle 14 refueling outage. The unit remained in a shutdown condition throughout the remainder of the reporting period. Reactor vessel head detensioning and core defueling activities were conducted appropriately; however, numerous refuel bridge equipment deficiencies caused delays in defueling activities.

Unit 2 operated at essentially full power for most of the report period. The licensee identified two conditions outside its design basis during this reporting period: on February 4 the licensee identified a potential common mode failure of the pressurizer pressure instrument loops which would cause the actuation of the RPS and ESFAS. Corrective action for this issue remains unresolved. On February 18 the licensee identified a condition where the capability to automatically isolate feedwater flow to a faulted steam generator would be lost during certain scenarios. The licensee initiated a reactor shutdown, but corrected the problem and secured the shutdown at 65 percent power. The event identified the need to clarify and strengthen the technical specifications for the feed water isolation safety function. Additionally, the licensee's corrective action for previously identified deficiencies in components important to safety was not consistent with the requirements of 10 CFR 50 Appendix B, Criterion XVI.

Unit 3 operated at full power for most of the report period. A six minute boron dilution of the reactor coolant system (RCS) resulted in a reactor power transient which momentarily exceeded the licensed thermal power limit of 3411 megawatts thermal. Reactor power was immediately stabilized at 100 percent. The licensee's root cause analysis and corrective actions were effective. On February 11, the licensee identified and corrected a condition outside its design basis where the containment drain sump pump level/pump monitoring system was not able to perform its required safety function of identifying a one gpm leak within one hour. Discretion was exercised and this violation of technical specification surveillance requirements was not cited. The adequacy of licensee review and audit of technical specification requirements was unresolved pending further NRC evaluation.

Maintenance

NRC maintenance inspection activities were focused on the site work control process and on Unit 1 during this report period because of the refueling outage and resultant extensive maintenance activities. Reactor vessel disassembly and inspection activities were performed well. Licensee actions to plug a leak in a reactor vessel drain line were determined to be good.

Prior to and during the early part of the Unit 1 refueling outage, work control process deficiencies were noted. The licensee took prompt corrective action to address the weaknesses and continues to reinforce the need to follow station procedures during the implementation of work activities. Because of the promptness of the licensee corrective actions, the process deficiencies will not be cited. Unit 2 has had recurrent configuration control problems resulting from poor work control practices. A violation was cited for failure to inform operators regarding the removal from service of a control room air conditioning unit.

Chronic deficiencies in the control of QA material in the Unit 1 maintenance shop have not been corrected, a violation will be issued. Additionally, a violation will be issued because inadequate corrective action was taken to correct a deficiency in a Unit 1 standby gas treatment system surveillance procedure.

Engineering

The licensee identified an unanalyzed condition where the primary containment isolation signal for the Unit 1 reactor water cleanup (RWCU) system was not fully operable. Input data used in a General Electric analysis performed in 1984 to model a break in the RWCU system was incorrect. Consequently, the RWCU isolation system is unable to actuate on low-low reactor vessel level and mitigate the consequences of a high energy line break (HELB) in the reactor building. At the close of this report period, the licensee had not completed a corrective action plan to reduce the effects of a HELB in the RWCU system piping. However, the problem will be resolved prior to plant restart in April 1994. The inoperability of the RWCU isolation, as well as, the recurrence of problems regarding the Unit 1 HELB analyses were noted as apparent violations.

The licensee identified a condition outside the Unit 3 design basis where prior to 1989, the feedwater isolation valves (FWIVs) may not have met the design and technical specification (TS) closure requirements. The FWIVs are currently operable; however, the ability of the FWIVs to meet TS requirements prior to 1989 remains unresolved.

Plant Support

On January 12, 1993, a shipment of radioactive material received at Millstone measured a dose rate of 600 mrem/hr on the external surface of one of the packages. Radiation levels one meter from the truck were found to be negligible, and the truck was not contaminated. The source of the radiation was identified and decontaminated. On October 12, 1993, a fire watch required by TSs fainted in the Turbine Lube Oil Room. Fire watch coverage of the Turbine Lube Oil Room was not in effect for less than 15 minutes.

Safety Assessment/Quality Verification

Sixteen licensee event reports were reviewed this inspection period. Corrective actions for ten licensee-identified violations of NRC requirements were found to be acceptable and the violations were not cited. One NRC identified violation involving inadequate commercial grade dedication of Unit 2 emergency diesel generator air start system solenoid operated valves was cited.

Four previous violations were closed based on NRC review of licensee corrective actions. In addition, six unresolved items were closed. One unresolved issue at Unit 2 concerning failure to comply with the technical specification action statement for inoperable main steam safety valves was cited.

Based on criteria set forth in 10 CFR 2, Appendix C, three other violations were identified but not cited in accordance with NRC Enforcement Policy 10 CFR 50, Part 2, Appendix C, Paragraph VII.B.

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The inspection procedures (IP) from NRC Manual Chapter 2515, Light Water Reactor Inspection Program, that were used as guidance are listed parenthetically for each report section.

The inspector observed examination of the reactor vessel dryer and a jet pump hold down beam. No indications were identified. Overall, the inspector concluded that the vessel inspection activities were being properly conducted at Unit 1.

3.4 Improper Storage of Plant Components - Unit 1

During an inspection of the Unit 1 maintenance area on September 7, 1993, an NRC inspector identified that General Electric 4160 volt breakers stored in the maintenance shop near the shop doors did not appear to be properly stored or protected. The breakers were green tagged by the licensee's receipt and inspection department with requirements that stated level 'B' storage for the breakers was necessary. Level 'B' storage requirements as stated in administrative control procedure (ACP) QA-4.04, "Instructions for Packaging, Shipping, Receiving and Handling," include protection from temperature extremes, humidity, and vapors, acceleration forces, physical forces and airborne contamination. Procedure ACP-QA-4.04 implements the guidance contained in ANSI 45.2.2 "...Receiving, Storage, and Handling of Items for Nuclear Power Plants." The inspector notified the licensee Quality Services Department (QSD) of this apparent deficiency. Upon further review by a QSD inspector, the licensee determined that the breakers were not properly stored as required by procedure ACP-QA-4.04. A QSD surveillance report No. QS-93-125 was issued describing the problem and requesting corrective action. In addition, QSD issued non-conformance report 1-93-068 to evaluate possible material degradation due to the improper storage. The QSD surveillance was closed when the maintenance organization stated that it had moved the equipment to a proper storage area.

During NRC inspection 50-245/93-29 conducted December 13-17, 1993, the NRC reviewed the licensee's actions concerning the improper storage of the breakers. Based on this review, the inspector determined that the root cause of the problem had not been addressed. The NRC review of procedure ACP-QA-4.04 indicated that the procedure did not define how long an accepted item can be left in the field before it is installed or returned to acceptable storage. The breaker storage problem occurred when a decision was made to perform receipt inspection of the breakers in the Unit 1 maintenance area. Receipt inspection personnel accepted the breakers per procedure ACP-QA-4.04 with the understanding that the breakers were going to be installed after they were received. However, the breakers were not installed in the system and were left for an extended period of time in a maintenance area that did not meet the level 'B' storage requirements. The inspector noted that this weakness applies to all Millstone units, not just Unit 1. The licensee committed to notify the NRC by January 7, 1994, when their procedures would be reviewed and corrected to prevent this type of problem from recurring.

On January 4, 1994, the licensee committed to reviewing and revising the appropriate procedures by June 1, 1994, to ensure a proper storage of safety-related items stored outside the warehouse. The NRC conducted a further review of the improper breaker storage

concern on January 10-13, 1994. The inspector verified that the spare 4160 volt breakers at Unit 1 are now stored in temporary cubicles in the Unit 1 Switchgear Room which meet level B storage conditions as defined by procedure ACP-QA-4.04 and ANSI 45.2.2. The licensee provided to the inspector documentation of tests performed on the three 4160 volt breakers which had been improperly stored to show that the breakers had not been harmed during the improper storage.

On January 21, 1994, the inspector noted that several 2-inch stainless steel globe valves were being stored outside of the Unit 1 maintenance shop on a pallet partially covered by a green tarpaulin. The valves had been green tagged by the licensee's receipt and inspection department as requiring level 'B' storage requirements. The inspector informed the licensee of the discovery. The licensee stated that the valves should not have been stored outside and a plant information report 1-94-31 was initiated to document the event. The licensee stated that the improperly stored stainless steel valves would be scrapped.

The 4160 volt breakers and the stainless steel globe valves were not properly stored by the licensee. Based on the confirmation of the improper storage of 4160 volt breakers and stainless steel globe valves, and subsequent NRC reviews of this issue as stated above, the licensee was in violation of 10 CFR 50 Appendix B Criterion XIII, Handling, Storage, and Shipping, which requires that measures shall be established to control the storage of material and equipment in accordance with work instructions to prevent damage or deterioration. (VIO 245/94-01-08)

3.5 Work Control Process Deficiencies - Unit 1

During this report period, two lapses in the work control process at Unit 1 were noted. First, a remote alarming diesel room high temperature alarm was in the process of being installed per Plant Design Change Record (PDCR) 1-99-92 to replace a locally read thermometer. On January 10, 1994, during the performance of a monthly Technical Specification (TS) surveillance test on the diesel generator, an unexpected diesel trouble alarm was received on the main control board. Investigation of the alarm at the local diesel generator control panel, revealed that it was caused by the incomplete high ambient air temperature alarm modification in the diesel generator room. In response to the alarm, operators verified that the local diesel area ventilation had started. The high temperature condition subsequently cleared once the ventilation system remained in operation.

At the time of the diesel surveillance test, the alarm had not been declared operable and turned over to the operations department for use. Remaining work that had to be accomplished included calibrating the sensor element. The licensee preliminarily determined that the annunciated high temperature condition was a "normal" occurrence, that would occur when the diesel was started until the ventilation system had operated for a period of time.

However, the inspector was concerned that operators had unnecessarily responded to unexpected equipment alarms that had not been declared fully operational. Investigation

ACTION

EDO Principal Correspondence Control

FROM: DUE: 04/01/94

EDO CONTROL: 0009884
DOC DT: 03/17/94
FINAL REPLY:

Sen. Joseph I. Lieberman

TO:

Chairman Selin

FOR SIGNATURE OF : ** GRN **

CRC NO: 94-0242

Executive Director

DESC:

ROUTING:

ENCLOSES LETTER FROM RON GAVENSKY RE ADEQUACY OF
THE MATERIALS INSPECTION PROCEDURES AT MILLSTONE
AND THE QUALIFICATIONS OF THE INSPECTORS

Taylor
Milhoan
Thompson
Blaha
TTMartin, RI

DATE: 03/18/94

ASSIGNED TO: CONTACT:

NRR Russell

SPECIAL INSTRUCTIONS OR REMARKS:

DR PE - action

OFFICE OF THE SECRETARY
CORRESPONDENCE CONTROL TICKET

PAPER NUMBER: CRC-94-0242 LOGGING DATE: Mar 18 94
ACTION OFFICE: EDO
AUTHOR: SEN JOSEPH I LIEBERMAN
AFFILIATION: U.S. SENATE
ADDRESSEE: CHAIRMAN SELIN
LETTER DATE: Mar 17 94 FILE CODE: IDR-5 MILLSTONE
SUBJECT: ADEQUACY OF THE MATERIALS INSPECTION PROCEDURES AT
MILLSTONE AND THE QUALIFICATIONS OF THE INSPECTORS
ACTION: Signature of EDO
DISTRIBUTION: CHAIRMAN, COMRS, OCA TO ACK, DSB
SPECIAL HANDLING: NONE
CONSTITUENT:
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DATE DUE: Apr 1 94
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