

May 20, 2002

Review of Allegations
Allegation NMSS 2002 A 0002
(Allegation File RIII-2002-A-0005) and
Allegation NMSS-2002-A-0003

Introduction:

In response to the allegations, two NRC inspectors from the Spent Fuel Project Office conducted a special inspection at Holtec International Incorporated in Marlton, NJ on May 6-9, 2002. The inspection was explained as an NRC follow up to previous inspection findings to assess the adequacy of corrective actions which, in fact, was done. Additionally, the inspectors examined the audit findings referenced by the concerned individual (CI) in the allegations. The inspectors told Holtec that they wanted to sample the adequacy of other corrective actions and had picked the Dry Cask Storage Group (DSQG) and Nuclear Procurement Issues Committee (NUPIC) audits to increase the sample size. Initially, the inspectors could not find any audit findings which dealt with use-as-is dispositions to US Tool and dies which was the subject of Allegation NMSS 2002 A 0002. The inspectors telephoned the CI at home on 5/7/02, left a message and received a call back at 10:00 AM on 5/8/02. The CI clarified the specific time of the CI's audit, which was a one person, one day visit by the CI in early 1999. The inspector told the CI that requesting the specific audit may lead to involved personnel guessing his identity. The CI stated that he had no objection to his identity being known. The audit was obtained and reviewed, but no comments were made by Holtec personnel suggesting that they suspected an allegation.

Allegation NMSS 2002 A 0002

1. *The Concerned Individual (CI) stated that a vendor [U.S. Tool & Die] modified spent fuel storage casks during the fabrication process by making repairs and/or accepted discrepancies "as is" without obtaining the required review and approval of the cask designer [Holtec]. CI is concerned that this was contrary to Excelon's (ComEd) procedures.*

Finding: Substantiated, but not a safety or regulatory concern.

The inspectors reviewed the CI's Audit finding dealing with the allegation. The audit was ComEd Audit SR-1999-41 of Holtec International for the Dresden plant and was conducted by one person, the CI, for one day on June 7, 1999. The related audit finding was SR- 1999-141-02, which stated that: (1) Holtec had failed to provide explicit procedures and instructions for repair and rework dispositions and (2) the Holtec deficiency form, a Supplier Manufacturing Deviation Report (SMDR), lacked a block to reflect reworked items. An SMDR is the form on which US Tool and Die reports nonconformances to Holtec for approval of the recommended corrective action. The inspectors noted the audit finding concluded that: "There is no negative impact on the product since Holtec has been relying on US Tool and Die QA Program for Repair and Rework items and has assured that the repaired or reworked items are re-inspected. However, Holtec's procedure needs to be updated to incorporate activities affecting quality."

The inspectors noted the example issues raised dealt with the so-called prototype cask which

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was the first-of-a-kind production prototype intended to surface any production problems. The inspectors noted however that the production casks were being manufactured in parallel following the prototype in sequence. The Com Ed contract with Holtec required use-as-is dispositions to be sent to ComEd for approval. The inspectors noted letters from Com Ed management to Holtec stating that Holtec was not following the contract requirement to forward use-as-is SMDR dispositions to Com Ed for approval. The inspectors noted that this was a contract requirement dispute and not a regulatory concern. The inspectors noted the dispute was eventually resolved by Holtec sending the use-as-is resolutions to Com Ed for information instead of approval thus eliminating delays. The inspectors noted that industry standards have special definitions for the terms "repair," "rework," and "use-as-is." The definitions vary somewhat between ASME and ANSI but have an underlying common requirement derived from regulatory requirements. The requirement is that if an item is not manufactured to the engineered requirements, the engineering organization must approve the change. When an item doesn't meet the original engineered requirements, but engineering has determined that the item is satisfactory for use without being restored, the term "Use-as-is" is used.

Two facts complicated the issue at US Tool and Die (UST&D). First, as the CI stated, the Holtec requirements did not include a classification for "rework," which means to fully restore the item to meet all requirements. Although this was true, the inspectors noted that this action does not require engineering approval, since all engineered requirements are met. Holtec resolved this issue in response to the audit finding by adding the category "rework" to the SMDR form. Second, UST&D fabrication drawings generally have tighter tolerances than the tolerances specified on the Holtec engineered drawings. This was done by UST&D to provide some margin for error on the shop floor without requiring engineering approval if the engineered drawing requirements were not exceeded. This is a common practice. In the cases where only the UST&D tolerances were exceeded, UST&D dispositioned the SMDRs as use-as-is without obtaining Holtec approval since the Holtec specified tolerances were not exceeded. The inspectors examined the examples in the CIs audit finding and found none that showed that Holtec engineering approval was required but was not obtained. The NRC inspectors made similar samples and reviews in the NRC inspection conducted at UST&D in February, 2002, and found no instances where Holtec approval was required but not obtained.

The inspectors concluded that the CI's Allegation 1 was substantiated, but not a safety or regulatory concern.

2. *CI is concerned about the inadequate QA/QC oversight by the spent fuel storage cask design organization [Holtec] over the spent fuel storage cask fabricator [U.S. Tool & Die] and that this inadequate oversight has resulted in indeterminate quality and the structural integrity of the casks is suspect. CI stated that the fabricator's disposition of nonconformance condition as "use-as-is," "rework," and "repair" was a violation of the QA program for design control as specified in 10 CFR 71 and 10 CFR 72. CI stated that "use-as-is" and "repair" dispositions are design changes and should be evaluated and documented by engineering analysis. In addition, the fabricator dispositioned many nonconformance conditions under its QA program without the design organization's consent.*

Finding: Substantiated, but not a safety or regulatory concern.

The CI concern stated in Allegation 2 is addressed in Allegation 1 above. However, no examples supporting the broad statement that inadequate QA oversight "resulted in indeterminate quality and the structural integrity of the casks is suspect." It is assumed the example intended is the use-as-is issue addressed in Allegation 1.

Allegation NMSS 2002 A 0003

1. *Wide-ranging welding deficiencies existed in spent fuel storage casks manufactured by Holtec and its subcontractors sufficient to demonstrate that there were and are fundamental flaws in the casks, and the casks are components to which 10 CFR Part 21 applies; however, neither Holtec nor Exelon made a required Part 21 report.*

Finding: Not substantiated

The inspectors identified the Com Ed audit findings associated with the CI and welding deficiencies. The audit was Dry Cask Quality Group (DSQG) Audit Report SR-2000-257 reported in a letter from Commonwealth Edison Company to UST&D on August 4, 2000. The audit was performed June 19-23, and July 5-7, 2000. The audit team consisted of the CI (team leader) and seven other auditors, two of whom were welding specialists. The audit resulted in nine findings and 3 recommendations. Finding No. SR-2000-210-06 applied to the welding deficiencies identified. The finding identified 11 separate apparent deficiencies. For example deficiency No. 5 noted that the data sheets for multiple pass weld joints did not provide adequate documentation to determine whether or not the welders had welded beyond their qualified thickness range.

UST&D responded to the audit findings in a letter dated September 5, 2000. The inspectors reviewed the 11 weld deficiencies and the UST&D responses. UST&D determined that 4 of the eleven deficiencies were not valid deficiencies and explained their basis. For the remaining seven deficiencies, UST&D determined the cause of the deficiency and described corrective action and action to prevent recurrence. The inspectors considered the UST&D actions to be appropriate. For example, for problem No. 5 above, UST&D verified that the welders were qualified for the joint in question and other sampled joints. The inspectors noted that none of the findings resulted in rework or repair of the hardware. Corrective actions primarily involved procedure clarifications and welder retraining regarding accurate weld documentation. Additionally, the NRC performed an inspection of fabrication activities, including welding, at UST&D in February, 2002. The results of that inspection did not identify welding problems and considered welding activities to be adequately controlled.

The inspectors concluded that the deficiencies identified by the two welding specialists were not excessive for an eight day audit, and were not substantive in that hardware was not affected. Therefore the inspectors concluded that the allegation that wide-ranging welding deficiencies existed in spent fuel storage casks manufactured by Holtec and its subcontractors sufficient to demonstrate that they were and are fundamental flaws in the casks, was not substantiated. Additionally, absent the identification of a defect in a basic component as defined in 10 CFR Part 21, the inspectors did not consider a report, in accordance with Part 21, to be required.

The inspectors concluded the allegation was not substantiated.

2. *Holtec spent fuel storage casks were manufactured with materials from suppliers who were not approved bidders to supply materials for safety-related use; however, these suppliers were never audited by Holtec or Exelon to establish product acceptability as required.*

Finding: Substantiated, but not a safety or regulatory concern.

The inspectors identified the Com Ed audit findings associated with the CI and materials suppliers. The audit was also the Dry Cask Quality Group (DSQG) Audit Report SR-2000-257 discussed above. Finding No. SR-2000-210-07 applied to materials suppliers. The finding identified five apparent deficiencies. One of the deficiencies involved a supplier of thread gages who was not on the approved vendor list and was not audited as required by Holtec procedures. The other deficiencies involve apparent past due dates for vendor re-audits and opinions that the vendor audit records were incomprehensible and lacked sufficient objective evidence in the audit checklist. UST&D responded to the audit findings in the previously mentioned response letter dated September 5, 2000. The inspectors reviewed the 5 material supplier deficiencies and the UST&D responses. UST&D determined that 2 of the 5 deficiencies were not valid deficiencies and explained their basis. For the remaining three deficiencies, UST&D determined the cause of the deficiency and described corrective action and action to prevent recurrence. The inspectors considered the UST&D actions to be appropriate. For example, for the problem involving thread gages, UST&D acknowledged the error in purchasing the measuring equipment from an unapproved vendor, had the gages' calibrations verified by an approved vendor, reviewed and identified other gages purchased from unapproved vendors, and had them verified. UST&D noted that no calibration discrepancies were identified by the recalibrations. UST&D also revised their procedures to prevent recurrence. The inspectors noted that none of the findings resulted in invalidation of work or required repair of the hardware.

The inspectors noted that the materials used for fabrication are almost exclusively provided to UST&D from Holtec using Holtec's approved suppliers. Additionally, the NRC performed an inspection of fabrication activities, including material controls, at UST&D in February, 2002. The results of that inspection did not identify material supplier control problems and considered the material supplier controls to be adequate. The inspectors concluded that the allegation was substantiated, but not a safety or regulatory concern.