SSER

Task: Allegation A-220; A-233; A-235; A-236

Reference Number: 4-84-A-06-108; 4-84-A-06-121; 4-84-A-06-122

Characterization: The allegation is that non-safety material (steel tubing adapters) was used in safety-related systems and that Mercury Nonconformance Reports (NCRs) on this subject were improperly dispositioned, closed, and never received an Ebasco NCR number.

Assessment of allegation: A review of purchase orders related to the adapters revealed that approximately 850 of about 2000 such adapters lacked heat code markings. Those without a heat code were all purchased from 1978 to 1980. Those purchased after 1980 had heat code markings.

A check of the warehouse stock of adapters revealed that some adapters lacking heat codes were marked "Hold for QC" and painted yellow. The others showed heat code markings. To compare the number of adapters purchased with the possible quantity necessary for safety system instrumentation, an estimate of the number of applications for these specific adapters was made. First, the instrument installation details were checked to find installations which required these specific adapters (Bill of Material Number 325); then the instrument list was reviewed to find the number of instruments in P2 and P3 safety system applications. This review included all flow, level, differential pressure, and pressure instrumentation. A cross-check of the two resulting lists showed that there were approximately 400 such adapters needed in safety systems, in addition to some needed for replacement purposes. A review of adapters with a heat code, showed that approximately 480 were issued to Mercury. From this review it was concluded that, overall, the number of heat-coded adapters needed and the number of heat-coded adapters available appear to be in reasonable agreement.

An LP&L QA employee was interviewed regarding the original NCR on the problem. Mercury did a document review of safety-related operating control report (OCR) packages to verify heat numbers. In cases where the heat number could not be verified, the adapter was cut out. This was the case for the 32 adapters replaced in the original NCR package completed on May 25, 1982.

Subsequently, in the Fall of 1982, as part of a material reverification program, a 100% walkdown was done by Mercury from the instrument root valves to the instruments in P2 and P3 applications. (P2 and P3 include safety-related applications.) This reverification included the adapters in question. If the inspector could not physically see the heat code on the adapters, he would research the weld/material data sheets to verify that the number was included there. (Note at the time of the walkdown, a larger number of installations had been made than when the original NCR was raised.) If the number could not be found in the field or in the document, an NCR would be

initiated. In some cases, this involved scraping off paint and then reinspecting and in other cases it involved cutting out the adapters. From this walkdown, the applicant believed that all safety-related systems contained the required heat coded adapters.

A number of operating control report (OCR) packages for safety systems which included adapters were reviewed to verify that the heat code numbers were recorded when installed or during reweld. All the documentation contained a heat code.

About 20 field installations for safety systems with adapters were inspected to see if the heat numbers were visible. Most were fully visible, some were partially visible, and four were not visible. It was not always possible to see all the way around the adapter because of adjacent equipment. For those cases where they were not visible it was possible that the marks were there but that the weld or heavy paint obscured them.

As a follow up to the walkdown, the documentation was checked to see whether the heat numbers were verified in the OCR packages for those four cases where there was no physical evidence of a heat number. For all cases the documentation showed the heat numbers.

Although the allegation only involved one-half to one-inch adapters, when looking at the OCR packages it was noted that for smaller adapters only "CAJON 316" was recorded. Also during the walkdown some of the pressurizer pressure taps which have the smaller adapters were inspected. It was noted that no heat number was marked on the adapters. "CAJON 316" was the only factory marking that was visible. Therefore this to was followed up with a review of the specific documentation. The OCR package for these adapters showed only "CAJON 316" in the record. A review of the applicable specification LOU 1564.407a, Section 15.02a showed that heat numbers were not required per the specification for these adapters.

The ASME (1974 version, 1976 addendum) Code requirements were checked to see if the code allowed such an exception. Based on the review, it was concluded that the ASME Code does allow this exception. In fact, the specification used the code wording. Therefore, this issue was not pursued further.

In one of the document packages reviewed (OCR - 1796), a closed NCR was found which appeared to be used to document the heat numbers, after paint removal, for 1" to 1/2" adapters, when in fact the closure documented the heat numbers for 1-1/2" to 1" reducers on the same instrument installation. A look at the installation did not reveal the heat numbers. Therefore, it was questioned how an inspector could verify C-66 on November 24, 1982, while the record did not show a reweld on the 1" side. The record did show, however, that subsequent rework was done on the tube side of the adapter. It is possible that this rework removed the heat code if, for example, it had been etched on the adapter face.

Some subsequent NCRs related to the adapters were reviewed. In two NCRs, the adapters were not verified as containing heat codes. These adapters were cut out and replaced. Another NCR required the return of 120 non-coded adapters to the warehouse for nonsafety applications.

Therefore, it appears that subsequent NCRs were filed. This, however, does not necessarily indicate that additional non-safety adapters were installed in safety systems. It may only indicate that to be conservative, safety-related adapters were cut out if the code was not visible and the heat code was not included in the documentation.

Based on the field walkdown, document review, and discussion with the applicant it is concluded that (1) there is reasonable assurance that the correct adapters with heat code are used in the safety systems, (2) both the coded and noncoded adapters are specified to be the same material (i.e., 316 stainless steel) and (3) in at least one case a Mercury NCR was improperly dispositioned and closed and never received an Ebasco NCR number.

With respect to the safety significance of the allegation, there is little if any safety significance even though one NCR was improperly closed. An NRC review indicates that there is reasonable assurance that the proper heat coded adapters are in the safety systems. The improper closure of NCR 1579 appears to be on isolated case and not generic with respect to the adapters. OI is investigating the possibility of falsification of documents.

Potential Violations: One NCR was improperly closed in violation of Criterion XVI of 10 CFR 50, Appendix B.

Actions Required: LP&L must correctly close NCR-1579. This should not impact fuel load or OL issuance, however, it should be done by 5% power.

References

1. Purchase Orders and Issuance of Adapters
2. Drawing of Adapters
3. NCR-126
4. Conversation Record - D. Thatcher, G. A. Pittman
5. Document Review for Adapters
6. Field Walkdown of Adapters
7. Follow up to Field Walkdown

8. Adapters 3/4" to 1/2", Specification, ASME Code
9. NCR-1579
10. OCR1796 Information
11. NCR-906, OCR-1771A, 1772 Information
12. NCR-2812
13. NCR-207 (W3-3107)
14. Instrument Details and Instrument List Review

Statement Prepared by _____ _____
Dale F. Thatcher Date

Reviewed by: _____ _____
Team Leader Date

Reviewed by: _____ _____
Site Team Leader(s) Date

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