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Interim Deficiency Report

Door Frame Nelson Stud Failures

Name of Station:	St. Lucie Plant - Unit 2
Owner:	Florida Power & Light Company
Architect/Engineer:	Ebasco Services, Incorporated
Date of Deficiency:	March 17, 1980
NRC Notification:	March 20, 1980
Interim Report Filed:	April 21, 1980

I. Summary

On March 17, 1980, Florida Power & Light's (FPL) Construction Quality Control Department issued a nonconformance report that identified a problem with Nelson studs connected to tornado resistant door frames. Apparently, some studs were improperly welded to the frame, and as a result, failed at the weld during installation of the frame.

Per the requirements of 10CFR50.55(e), the event was deemed potentially reportable and per telecon, FPL notified the NRC on March 20, 1980. This interim report is being submitted to advise the NRC of the status of our review.

II. Description

A Project Specification (FLO-2998-769J) was prepared by the Architect/ Engineer to purchase Tornado Resistant Doors for installation in the Diesel Generator Building, Component Cooling Water Building and Diesel Oil Storage Tank Building. A purchase order (NY-422669) was placed with R V Harty Co. to supply the subject doors.

The door frames were received onsite, inspected and released to the field. Due to rebar interference, some of the Nelson studs were bent according to procedure and subsequently failed at the weld. FPL Quality Control personnel then performed a detailed visual inspection and approximately 37 percent (365 out of 996) of the welds were rejected.

The doors affected are as follows:

Component Cooling Water Bldg.	CC1*, CC2*
Diesel Generator Bldg.	DG1, DG2, DG3, DG4, DG5, DG6
Diesel Oil Storage Tank Bldg.	DO4, DO5

* The doors CC1 and CC2 have the bottom section embedded in concrete.

According to requirements of AWS D 1.1, a specification requirement, the welded studs should have been able to withstand a 15 degree bend and still retain structural adequacy. In addition, general requirements, workmanship, inspection and testing are required to be in accordance with AWS D 1.1, Section 4. Contrary to the above, door frame studs were easily removed before 15 degrees could be reached. The site visual inspection revealed that studs were found to have no 360 degree flash, blowouts at the side of studs, shrink fissures and in some cases, nonfusion clearly seen at the base of the stud to the side of the frame.

The vendor, R V Harty Co. has been contacted and requested to supply an explanation as to why the stud welds have failed. This information will be supplied in the final report.

III. Corrective Action

The door frames that had unacceptable studs were either repaired or had studs replaced and subsequently passed inspection. To account for the possible deficient welded studs in the bottom portion of doors CC1 and CC2 (embedded in concrete), five additional Nelson studs were added to each vertical side of both frames. More specific information regarding repair/replacement procedures will be supplied in the final report.

IV. Safety Implications

This deficiency, found in construction, could have adversely affected the safety of operation of the plant during its 40 year life if it were to have remained uncorrected. It represents a significant deviation from performance specifications which will require repairs to establish the adequacy of the component to perform its intended safety function.

V. Conclusion

A final report will be submitted by July 31, 1980, with the results of our review and necessary actions taken.