INTERIM REPORT

INCORRECT ANCHOR BOLT MATERIAL

I. Summary

On February 5, 1979, Houston Lighting & Power Company (HL&P) notified the Nuclear Regulatory Commission (NRC) of a potentially reportable deficiency under 10 CFR 50.55(e). This deficiency concerned the installation of anchor bolts manufactured from improper material by Brown & Root, Incorporated. Some of these bolts are employed in safety related areas and of these, some could not meet original design requirements. Hence, on February 8, 1979, HL&P notified the NRC that the item was being considered reportable.

The deficiency was caused by the failure of Quality Control personnel to verify the correctness of all information on requisitions. As a result of this, material other than specified was released for installation. Corrective action to rectify the incident has been initiated. Bolts not yet embedded have been investigated and found to be satisfactory with one exception. That exception concerns the investigation of the bolts for the Component Cooling Water Supports which is not yet complete.

Action taken to prevent recurrence includes instructions to the appropriate QA personnel to verify the correctness of all information on a requisition. Plans for other action are not yet complete and will be identified in the final report.

An analysis of the safety implications was not performed. The assumption was made that the deficiencies in safety related areas could adversely affect the safety of the plant and emphasis was placed on ensuring that an acceptable level of safety is maintained.

II. Description of the Incident

During an anchor bolt pull test on a B&R manufactured anchor bolt, it was discovered that the bolt had been manufactured from improper material. The purpose of this test was to confirm that the bolt would fail before the plate. The plate, however, failed before the bolt but at a stress much higher than the yied strength of the ASTM A-36 bolt material. A subsequent investigation revealed that the bolt material was ASTM A-193 steel instead of the ASTM A-36 material that was specified for the bolt. An investigation revealed that a mix-up had occurred in the bar stock material that was used to manufacture the bolts.

III. Corrective Action

B&R Construction and QA conducted an intensive investigation of the materials used to manufacture anchor bolts. It was determined that ASTM A-36 and ASTM A-139 material had been interchanged on twenty-one work orders. Of these twenty-one work orders, there were thirteen cases where the bolts were embedded in concrete. In the other eight cases, the anchor bolts were not embedded in concrete and correct bolts could be substituted. In six of the thirteen cases where bolts were embedded, ASTM A-36 material had been substituted for the higher strength ASTM A-192 material. The substitution of

the higher strength ASTM A-193 for the ASTM A-36 was satisfactory. An investigation was made to determine the significance of the six cases where the unsatisfactory substitution had been made. In one of these cases, the bolts were not embedded, and the proper material could be replaced. Of the remaining five cases, three of the substitutions were found to be acceptable without any modification of requirements. The two remaining substituions are described below:

a. Pipe Support Brackets for the Hot and Cold Legs of the Reactor Coolant Loops

   The original Westinghouse torque requirements was 54 kips. At the request of B&R, Westinghouse has reevaluated load requirements and has reduced the torque requirements to 25 kips. This loading is within the allowable strength of ASTM A-36 material.

b. Component Cooling Water Supports

   This application is under investigation.

To prevent recurrence, receiving QC personnel have been instructed that it is the responsibility of the Receiving Inspector to verify the correctness of all information on the requisition as well as the verification that the item has been released. Additionally, on all stock steel a copy of the Certified Material Test Report is required to accompany the requisition. Other corrective actions taken will be discussed in the final report.

IV. Safety Evaluation

An analysis of the safety implications was not performed. The assumption was made that the deficiencies in safety related areas could adversely affect the safety of the plant and emphasis was placed on ensuring that an acceptable level of safety is maintained.