

400 Chestnut Street Tower II

September 11, 1980

POOR ORIGINAL

Mr. James F. O'Reilly, Director
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Region II - Suite 3400
101 Marietta Street
Atlanta, Georgia 30303

Dear Mr. O'Reilly:

YELLOW CREEK NUCLEAR PLANT UNIT 1 - REBAR IN CONTROL BUILDING WALL -
NCR YC-090 - FINAL REPORT

The subject deficiency was initially reported to NRC-OIE Inspector
M. Thomas on August 26, 1980, in accordance with 10 CFR 50.55(e).
Enclosed is our final report.

If you have any questions concerning this matter, please get in touch with
D. L. Lambert at FTS 857-2651.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

L. M. Mills, Manager
Nuclear Regulation and Safety

Enclosure

cc: Mr. Victor Stello, Jr., Director ✓
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, DC 20555

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ENCLOSURE

YELLOW CREEK NUCLEAR PLANT
REBAR IN CONTROL BUILDING WALL
NCR YC-090
10 CFR 50.55(e)
FINAL REPORT

Description of Deficiency

Eighty four reinforcing bars (rebar) were left out of wall pour C1-F1 located in the control building. The apparent cause of the missing rebar was because of inspector error and/or rebar being removed for other installations after the concrete pour card had been signed.

This report also references NCR's YC-055, YC-085, YC-073, and YC-096. Although these NCR's on missing rebar by themselves were not determined significant, they appear to represent a generic concern at YCN.

Safety Implications

Failure to install rebar could result in the concrete structure not meeting the minimum structural strength required to provide its safety function. This could have resulted in degradation of plant structures and affected adversely the safety of operations of the plant.

Corrective Action

The 84 missing rebar for this NCR (YC-090) will be installed by drilling in the appropriate location and grouting them into place using nonshrinking grout. This will be complete by November 1, 1980.

As a result of this nonconformance, a plan was prepared for investigating the extent of missing rebar in the control building. The investigation results are:

- (1) All exposed rebars in the control building (approximately 5,500 rebars) were inspected, and four missing rebars were discovered. These are identified on and the subject of NCR YC-096.
- (2) The craft rebar fabrication records were reviewed and compared to our detailed rebar listings made from drawings review (takeoffs); however, no usable information was obtained.
- (3) A review of our control building NCR's shows that we have had three similar cases where rebar was left out of pours. In one of the cases, the six missing rebars were due to crafts and inspector error and were identified and dispositioned on NCR YC-055. The other two cases were due to rebar being removed to accommodate other installations after final acceptance. One of the cases consisted of four rebars and was identified and dispositioned on NCR YC-085. In the other instance, eleven rebars were removed to allow another installation and only ten were replaced resulting in one rebar being omitted. This was identified and dispositioned on NCR YC-073.

This investigation has shown the adequacy of rebar placement in concrete pours at Yellow Creek with the results of the study indicating that although occasional rebar was missed, they were identified during preparation for subsequent pours.

Corrective action taken to prevent recurrence of rebar being missed in concrete pours in safety-related areas will include the following:

- (1) The use of detailed takeoff checklists will be supplied for inspectors. Quality Control-Materials and Civil personnel will make a detailed takeoff for each concrete pour and record it on record sheets. This record sheet will subsequently be used by rebar inspectors as a checklist while inspecting rebar installation. This record sheet will be retained as further verification of correct rebar installation in addition to the concrete pour card.
- (2) Final inspection and signoff of the pour card for rebar inspection will be held until all other craft work (except cleaning) has been completed and will be the last inspection and signoff immediately before releasing the pour by the shift engineer.

TVA has initiated the above corrective actions and was in compliance as of September 8, 1980.