

BEAVER VALLEY POWER STATION - UNIT NO. 2
INTERIM REPORT ON THE WELD DISCREPANCIES IN
REACTOR VESSEL SUPPORT (NEUTRON SHIELD TANK)
SIGNIFICANT DEFICIENCY 79-05

1.0 SUMMARY

A visual inspection of the reactor vessel structural support (neutron shield tank) at the jobsite storage area, by Duquesne Light Company/Site Quality Control (DLC/SQC) personnel, revealed some areas of weld overlap at the toe of two fillet welds, producing a potential lack of fusion condition. A disposition was issued to the jobsite on October 31, 1979, to randomly select approximately 30 percent of the weld overlap condition and to grind the overlap to a depth not to exceed 1/16 in. below base metal surface followed by a magnetic particle (m.p.) inspection. One of the two weld overlap areas revealed no weld indications after grinding and magnetic particle inspection, in accordance with the above disposition. The second continuous weld area produced a linear indication along one toe of a fillet weld at eleven out of eleven areas randomly selected.

2.0 IMMEDIATE ACTION TAKEN

Further grinding was performed on November 29, 1979, beyond the original 1/16 in. below base metal surface, on four of the eleven areas containing linear indications. The results of this grinding effort were evaluated and notification of the potentially reportable deficiency was made to NRC Region I on December 7, 1979, under 10CRF50.55 (3)(1)(iii).

3.0 DESCRIPTION OF DEFICIENCY

In two of the areas the indications were removed by grinding to a depth of 1/4 inch below the base metal surface. The remaining two indications are still present after grinding to a depth of 3/8 inch and 9/16 inch below base metal surface. The linear indications appeared to be confined to the weld metal/fusion line, along one toe of a 1/2 in. fillet reinforcement of a full penetration weld, joining a 1-1/2 in. thick, cylindrical plate section to a 4 in. thick base flange. Based on the limited examination performed to date, the magnetic particle indications appear to be characteristic of a lack of fusion and flux entrapment, resulting from improper welding techniques. The investigation is continuing.

4.0 ANALYSIS OF SAFETY IMPLICATIONS

Analysis of safety implications will be provided in the final report.

5.0 CORRECTIVE ACTION TO REMEDY DEFICIENCY

All linear indications will be removed and all weld excavations will be rewelded and magnetic particle inspected in accordance with original specification requirements prior to installation. It is anticipated that complete excavation of the weld discrep-

ancy will commence in mid-January 1980.

All welds on the support have been visually inspected and all minor (cosmetic) weld discrepancies have been removed by grinding. Weld discrepancies, other than those considered to be minor, are being mapped for further evaluation/disposition.

Recurrence of this weld condition will be prevented by removal of all weld surface conditions, such as weld overlap, prior to magnetic particle inspection.