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October 29, 1984
RBG-19313
File Nos. G9.5, G9.25.1.1

Mr. Robert D. Martin, Regional Administrator
U. S. Nuclear Regulatory Commission
Region IV, Office of Inspection and Enforcement
611 Ryan Plaza Drive, Suite 1000
Arlington, Texas 76011

Dear Mr. Martin:

River Bend Station Unit 1
Docket No. 50-458
Final Report/DR-249

On September 27, 1984, GSU notified Region IV by telephone that it had determined DR-249 to be reportable under 10CFR50.55(e). This deficiency concerns the mechanical interlocking system of W. J. Woolley personnel airlocks. The attachment to this letter is GSU's final 30-day written report pursuant to 10CFR50.55(e)(3) with regard to this deficiency.

Sincerely,

L. A. England

for J. E. Booker
Manager-Engineering,
Nuclear Fuels & Licensing
River Bend Nuclear Group

JEB/PJD/lp

Attachment

cc: Director of Inspection & Enforcement
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

NRC Resident Inspector-Site
INPO

IE-27

ATTACHMENT

DR-249 Mechanical Interlocking System of
W. J. Woolley Personnel Airlocks

Background and Description of the Problem

The problem involves the malfunction of the mechanical interlocking system of the upper containment vessel personnel airlock supplied by W. J. Woolley Company. The upper containment vessel personnel airlock was designed and fabricated by W. J. Woolley Company under Graver Contract No. RBS-219.719-C056.

The function of the airlock interlocking system is to allow access in and out of the containment vessel without breaking the pressure boundary. This system provides an interlock between the reactor door and the outer door so that only one door can be open at a time.

The interlocking system had functioned properly during an airlock operational test performed at the W. J. Woolley shop. However, after shipment and field installation of the airlock, a preliminary operational test performed by SWEC Construction and a W. J. Woolley representative revealed that the interlocking system did not operate properly.

Safety Implication

Since each of the airlocks was scheduled to be given a field operational test consisting of six cycles of repeated operations of each door prior to acceptance in accordance with Specification Nos. 219.711 and 219.713, the malfunction of the interlocking system probably would have been detected. However, since the interlocking system functioned properly in the shop, the reliability of the system is therefore questionable. It can be conservatively assumed that containment access may not have been possible sometime during the operation of the plant.

Corrective Action

The underlying cause of the malfunction of the interlocking system is attributed to the inadequate design of the interlock cam and linkage lever by W. J. Woolley. Proper mechanical advantage was not provided to allow the linkage lever bushing to move freely, causing excessive wear on the bushing. The shop operational test caused enough wear on the bushing so that during the preliminary field test, the system did not operate properly.

The corrective action is underway. The interlocking system was removed, and W. J. Woolley is redesigning the interlock cam and linkage lever for proper operation in accordance with the disposition of Nonconformance and Disposition Report (N&D) No. 7161.

Similar corrective action is also scheduled for the lower containment vessel personnel airlock and the drywell personnel airlock, since the interlock design is identical to the upper containment airlock.