DUKE POWER COMPANY
POWER BUILDING
422 SOUTH CHURCH STREET, CHARLOTTE, N. C. 28242

WILLIAM O. PARKER, JR.
VICE PRESIDENT
STEAM PRODUCTION

November 16, 1981

TELEPHONE: AREA 704
373-4083

Mr. James P. O'Reilly, Director
U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, Suite 3100
Atlanta, Georgia 30303

Re: McGuire Nuclear Station
Unit 2
Docket No. 50-370

Dear Mr. O'Reilly:

Pursuant to 10CFR 50.55e, please find attached Significant Deficiency Report SD 370/81-10 concerning Westinghouse's discovery that their SA1 relay will not pass the requirements of ANSI C37.90-1978. This has been previously reported for Unit 1 as LER 369/81-162.

This report is being submitted 1 working day late. We apologize for any inconvenience this may have caused.

Very truly yours,

William O. Parker, Jr.

PBN/smh

Attachment

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

Ms. M. J. Graham
NRC Resident Inspector
McGuire Nuclear Station

IE 27
S1/1

McGUIRE NUCLEAR STATION
SIGNIFICANT DEFICIENCY

REPORT: SD-370/81-10

REPORT DATE: 11/16/81

FACILITY: McGuire Nuclear Station, Unit 2

IDENTIFICATION OF DEFICIENCY: Westinghouse has discovered that their SA1 relay will not pass the requirements of ANSI C37.90-1978. This deficiency was brought to our attention through letters dated 7/23/81 and 10/1/81. On October 16, 1981, Mr. A. Ignatonis of the NRC Region II office was contacted and notified of this item by W. O. Henry and W. J. Foley of Duke Power Company, Charlotte, NC 28242.

DESCRIPTION OF THE DEFICIENCY: Westinghouse notified Duke Power Company that they had discovered a generic problem with their SA1 differential relays in that they would not pass the full surge withstand requirements of the ANSI Standard C37.90-1978. This standard requires that a relay withstand a 2.4KV crest value of a test oscillatory wave and their tests indicate possible failures above a 1.8KV crest. If such a surge were to be present on the 125 VDC control power inputs to the relay, the relay could possibly give a false trip output.

At McGuire, the SA1 relay is used to protect the Class 1E diesel generators (emergency AC on-site power sources) against the short circuits. Each diesel generator is protected by its own respective relay. If a given SA1 calls for a trip, the affected diesel generator's main circuit breaker will trip. A shutdown of the diesel engine and generator will also occur.

ANALYSIS OF SAFETY IMPLICATIONS: If a situation were to occur at McGuire Unit 2 in which all offsite power was lost, the two diesel generators (train A and train B) would provide the required onsite AC power. In the event that a given surge above the withstand capability of the SA1 then caused a relay to false trip, one of the two onsite AC power sources would be lost until it could be determined that a false trip had occurred. In order to restore power to the affected train, the lockout relay tripped by the SA1 relay would have to first be reset. The affected diesel generator would then have to be restarted and loaded.

A given surge causing a trip of an SA1 would affect only one relay since each diesel generator's SA1 relays are powered by independent DC systems and connected to their respective independent current transformers. The AC power required to shutdown the plant would be provided by the unaffected diesel generator. Thus, there would be no affect on the health and safety of the public.

Duke Power Company has employed the Westinghouse SA1 relay in various applications for years in both Class 1E and non-Class 1E service. A false trip attributable to surges has never occurred. The probability of the above scenario occurring is judged extremely remote.

CORRECTIVE ACTION: Westinghouse has available modification kits for the SA1 relays that can be used to upgrade the surge withstand ability to that called for in ANSI C37.90-1978. These kits are being ordered and are expected to be installed by July 1, 1982.