



Arizona Nuclear Power Project

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U.S. Nuclear Regulatory Commission
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Washington, D.C. 20555

Subject: Palo Verde Nuclear Generating Station (PVNGS)
Unit 1
Docket No. STN-50-528, (License No. NPF-41)
Report of Notification of Unusual Event - Reactor Trip
File: 86-020-404; G.1.01.10

Dear Sirs:

Attached please find a report describing a Notification of Unusual Event at Unit 1 of the Palo Verde Nuclear Generating Station on January 9, 1986. This report addresses a reactor trip during testing due to a loss of power to the reactor coolant pumps.

This report is prepared and submitted pursuant to Table 5.3-1 of the PVNGS Emergency Plan. By copy of this letter, we are also forwarding a copy of the report to the Regional Administrator of the NRC Region V office and other offsite authorities.

If you have any questions or concerns, please contact Mr. W. F. Quinn of my staff.

Very truly yours,

EE Van Brunt Jr.
E. E. Van Brunt Jr.
Executive Vice President
Project Director

EEVB/BJA/wa
Attachment

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PALO VERDE NUCLEAR GENERATING STATION UNIT 1
NOTIFICATION OF UNUSUAL EVENT OF JANUARY 9, 1986

Docket No. 50-528

License No. NPF-41

Special Report No. 1-SR-86-002

At 1403 MST on January 9, 1986, the NRC Operations Center was notified, via the Emergency Notification System, of the declaration of a NOTIFICATION OF UNUSUAL EVENT for Unit 1 of the Palo Verde Nuclear Generating Station. The NOTIFICATION OF UNUSUAL EVENT was declared pursuant to Emergency Plan Implementing Procedure-02, which requires the reporting of a reactor trip which is complicated by concurrent or subsequent events or conditions.

At approximately 1325, the plant was in Mode 1 at 100% reactor power, with a pressure of 2250 psi and a cold leg temperature of 565 degrees F, when a turbine trip was initiated as a scheduled part of the power ascension testing program.

The test was initiated by simulating a fault on the main generator. This type of fault will open the output breakers and cause the non-essential house loads to be automatically "fast transferred" to offsite power sources. The Reactor Power Cutback System was intentionally left out of service as part of the test.

The test was initiated by actuating the Unit Differential Generator Protection Relay. As expected, the 525V generator output breakers opened. House loads (including the RCPs and circulating water pumps) did not "fast transfer" to the off-site power source. A reactor trip was generated by the Core Protection Calculators (CPC) from flow projected Departure from Nucleate Boiling Ratio. The Reactor Coolant Pump speed was decreasing at the time of the first CPC channel trip. After the reactor coolant pumps coasted down, core cooling occurred via natural circulation.

The steam bypass control valves received a Quick Open signal, but reclosed almost immediately due to the loss of power. Steam generator pressure increased rapidly until one Main Steam Safety Valve (MSSV) lifted, remaining open for approximately 43 seconds before reseating. As the MSSV reseated, five Steam Bypass Control System (SBCS) valves modulated open. The SBCS valves remained open for approximately 45 seconds with a subsequent period of oscillation (3 open-close cycles) over about 40 seconds.

The operator took manual control of the individual SBCS valves in order to stop the secondary system induced cooldown event. At approximately the same time, a Main Steam Isolation Signal (MSIS) occurred due to low Steam Generator Pressure. The MSIS terminated the cooldown with the reactor coolant system cold leg temperature reaching 540F.

(Continuation of Special Report 1-SR-86-002)

The reactor coolant system temperature and pressure recovered (due to decay heat) and the operator re-established a cooldown via use of a steam generator, 2 atmospheric dump valves and the essential motor driven auxiliary feedwater pump.

Power was restored to the non-essential buses at 1328. Reactor coolant pump 1A was restored at 1408 and 2A at 1411, re-establishing forced circulation.

At 1337, the shift supervisor declared a NOTIFICATION OF UNUSUAL EVENT and made the appropriate notifications.

During the event, power was not lost to the essential power buses. Also, no safety limits were violated. The transient did not result in any challenges to the fission product barriers, or result in any releases of radioactive materials. The NOTIFICATION OF UNUSUAL EVENT was terminated at 1449.

An LEK will be submitted within 30 days to further describe this event.