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7 septembre 2016

Etats-Unis : Palo Verde : arrêt manuel du réacteur suite au blocage en position ouverte d'une vanne principale d'injection du pressuriseur

Le réacteur était à 100 % de puissance quand un transfert de source électrique a été effectué en prévision de l'entretien d'un panneau de distribution. Cette réparation tentée à "la volée" à pleine puissance et le transfert de source électrique ayant échoué, le panneau est resté alimenté par son alimentation normale. Cependant, plusieurs composants alimentés à partir de ce panneau ont commencé à dysfonctionner : une vanne principale d'injection du système de refroidissement du réacteur est restée ouverte malgré des tentatives de la fermer. Les pompes de refroidissement du réacteur ont été mises hors tension pour mettre fin à l'écoulement au pressuriseur. La vanne a été fermée manuellement car la pression du pressuriseur continuait de baisser. Il n'y a pas eu de classement d'urgence. La ligne électrique d'alimentation extérieure est restée connectée.

La température serait normale et le refroidissement du réacteur assuré par thermosiphon. La pression primaire est maintenue à sa pression normale de fonctionnement manuel avec la chauffe du pressuriseur et une alimentation auxiliaire en eau, L'événement n'aurait eu "aucune conséquence défavorable sur la santé et la sécurité du public".

Type : PWR - Puissance : 3 990 MWth - Première divergence : 05 / 1985 -

Available in english only

Event Number : 52226

Facility : PALO VERDE - State : AZ

Unit : [1] - RX Type : [1] CE

Event Date : 09/07/2016 - Event Time : 21:31 [MST]

Emergency Class : NON EMERGENCY 10 CFR Section : 50.72(b)(2)(iv)(B) - RPS ACTUATION - CRITICAL

Initial PWR : 100 % Current PWR : 0 %

Event Text

MANUAL REACTOR TRIP DUE TO STUCK OPEN PRESSURIZER MAIN SPRAY VALVE

"On September 7th, 2016 at approximately 2131 Mountain Standard Time (MST), Palo Verde Unit 1 was manually tripped due to a stuck open main spray valve. Unit 1 was operating at 100 percent power at normal operating temperature and pressure prior to the event. A 120 VAC non-class instrument distribution panel was being transferred to its alternate power supply to establish maintenance conditions. The distribution panel failed to transfer. The panel remained energized from its normal power supply ; however, multiple components powered from the distribution panel began to exhibit uncharacteristic behavior. At this time, it was noted that a reactor coolant system main spray valve was open. The alarm response procedure was followed ; however, the actions taken were unsuccessful at closing the main spray valve. The plant was then manually tripped due to pressurizer pressure continuing to lower. The reactor coolant pumps were turned off to terminate main pressurizer spray flow to control pressurizer pressure due to the inability to close the main spray valve. No ESF [Engineered Safety Features] actuations occurred and none were required. No emergency classification was required per the emergency plan. Safety related buses remained energized during and following the reactor trip. The emergency diesel generators did not start and were not required. The offsite power grid is stable. Limiting condition for operation 3.4.1 was entered due to low pressurizer pressure. No major equipment was inoperable prior to the event that contributed to the event.

"Unit 1 is stable at normal operating temperature and pressure in Mode 3. Reactor coolant pumps are secured and natural circulation has been verified. Primary pressure is being maintained at its normal operating pressure manually with pressurizer heaters and auxiliary spray, from the charging system. The event did not result in any challenges to fission product barriers and there were no adverse safety consequences as a result of this event. The minimum RCS pressure was approximately 2070 psia (normal 2250). The event did not adversely affect the safe operation of the plant or the health and safety of the public."

All rods inserted and the trip was uncomplicated. Units 2 and 3 were not affected and continue to run at full power.

The NRC Resident Inspector has been notified.

<https://www.nrc.gov/reading-rm/doc-collections/event-status/event/2016/20160909en.html#en52226>