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9 mars 2019

Etats-Unis : Browns Ferry : Arrêt automatique d'urgence du réacteur n° 3

Cet arrêt d'urgence intempestif s'est produit suite à l'activation du système de protection du réacteur ainsi qu'à celui du système de refroidissement d'urgence du cœur. L'origine du problème est liée à la défaillance du disjoncteur de l'alternateur principal ainsi qu'à la tombée de la charge de la turbine. Il y a eu réception des signaux du système d'isolement et de confinement du circuit primaire. Tous les mécanismes sollicités ont fonctionné correctement. Les soupapes de sûreté se sont ouvertes pour libérer la pression lors du premier transitoire. L'injection de liquide de refroidissement haute pression et l'isolation du cœur ont été activés suite à l'atteinte d'un niveau bas d'eau dans le réacteur. Les trois diesels de secours ont démarré comme ils le devaient. Le système de retrait de la chaleur résiduelle est en service pour assurer le refroidissement de la piscine. Le 4 000 volts a été restauré à parti du 160 mille volts.

Type : Fukushima 1 (BWR Mark 1) MAIS 3 fois plus puissant : 3 458 MWth - Première divergence : 8 / 1976 -

Available in english only

Event Number : 53923

Facility : BROWNS FERRY - State : AL -

Unit : [3] - RX Type : [3] GE-4

Event Date : 03/09/2019 - Event Time : 22:59 [CST]

Emergency Class : NON EMERGENCY 10 CFR Section : 50.72(b)(2)(iv)(B) - RPS ACTUATION - CRITICAL 50.72(b)(3)(iv)(A) - VALID SPECIF SYS ACTUATION

Initial PWR : 100 % Current PWR : 0 %

Event Text

AUTOMATIC SCRAM RESULTING IN RPS AND ECCS ACTUATION

"At 2259 CST on 3/9/2019, Browns Ferry Unit-3 received an automatic SCRAM on Main Generator Breaker Failure and Turbine Load Reject. Unit-3 declared a Notification of Unusual Event SU1 for loss of offsite AC power to Unit-3 specific 4kV Shutdown Boards for greater than 15 minutes.

"Primary Containment Isolation Systems (PCIS) Groups 1, 2, 3, 6, and 8 isolation signals were received. Upon receipt of these signals, all required components actuated as required. Main steam relief valves lifted on the initial transient. High Pressure Coolant Injection (HPCI) and Reactor Core Isolation Cooling (RCIC) initiated on low reactor water level. HPCI remains in service for reactor level and pressure control. RCIC is not in service at this time, the station is investigating low flow from the pump. All four Unit-3 Diesel Generators started and loaded as expected. Residual Heat Removal System is in service for suppression pool cooling.

"4kV Station Unit Boards have been restored from the 161kV system. Actions are in progress to restore 4kV Shutdown Boards to offsite power.

"This event is reportable within 1 hour in accordance with 10 CFR 50.72(a)(1)(i) for declaration of the Licensees Emergency Plan. Complete as documented on EN 53922.

"This event requires a 4 hour report per 10 CFR 50.72(b)(2)(iv)(B), 'Any event or condition that results in actuation of the reactor protection system (RPS) when the reactor is critical except when the actuation results from and is part of a pre-planned sequence during testing or reactor operation.'

"This event also requires an 8 hour report per 10 CFR 50.72(b)(3)(iv)(A). 'Any event or condition that results in valid actuation of any of the systems listed in paragraph (b)(3)(iv)(B), (1) Reactor protection system (RPS) including : reactor scram or reactor trip, (2) General containment isolation signals affecting containment isolation valves in more than one system or multiple main steam isolation valves (MSIVs), (4) ECCS [Emergency Core Cooling System] for boiling water reactors (BWRs) including : core spray systems ; high-pressure coolant injection system ; low pressure injection function of the residual heat removal system, (5) BWR reactor core isolation cooling system ; isolation condenser system ; and feedwater coolant injection system, and (8) Emergency AC electrical power systems, including : Emergency diesel generators (EDGs).'

"The NRC resident inspector has been notified."

As of the event report, the MSIVs were opened and decay heat was being removed via the bypass valves to the condenser.

<https://www.nrc.gov/reading-rm/doc-collections/event-status/event/2019/20190311en.html>