

Facility:	Davis-Besse	Scenario No.:	3	Op Test No.:	DB NRC 2016
Examiners:	_____	Operators:	_____		SRO
	_____		_____		ATC
	_____		_____		BOP
Initial Conditions:	• 100% Power				
Turnover: Maintain 100% Power					
Planned: Shift routines					
Critical tasks: 1. Establish MU/HPI cooling (CT-14)					
2. Trip All RCPs (CT-1)					
Event No.	Malf. No.	Event Type*	Event Description		
1		C-ATC/BOP/SRO (TS)	RCS pressure NNI input fails low		
2		C-BOP/SRO R-ATC/SRO	HPFW Heater tube leak		
3		I-ATC/SRO	PZR Level Temp compensating instrument fails low		
4		C-BOP/SRO (TS)	Isolable steam leak – Loss of AFP 2		
5		I-ATC/SRO	Loss of ICS DC – trip reactor		
6		C-BOP/SRO	Loss of AFP 1 – start MDFP		
7		M- All	Loss of all Feedwater – initiate MU/HPI/PORV cooling		
* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor					

DAVIS-BESSE 2016 NRC SCENARIO 3

The crew will take the watch with power at 100% power and no activities planned. The first event will be triggered resulting in the RCS pressure instrument selected for NNI failing low. The crew will implement DB-OP-02513, Pressurizer System Abnormal Operation, for failure of pressure input to heater. Manual control of heaters will be required due to input pressure signal failed low. The pressure input to NNI will be swapped to the non-faulted signal IAW DB-OP-06403, RPS and NNI Operating Procedure. Heater controls will then be returned to automatic control. The Unit Supervisor will enter applicable Technical Specifications (3.3.1) for the pressure instrument failure and direct tripping or bypassing the RPS channel with failed instrument within one hour (TS). On the Lead Evaluators discretion the scenario will proceed to event 2.

Event 2 will result in a HPFW Heater 1-6 tube leak. The crew will diagnose in response to annunciator 13-5-E, HPFW Htr 1-5 Lvl, using alarm procedure DB-OP-0213, Condensate Feedwater Alarm Panel 13 Annunciators. Power will be lowered to 95% using DB-OP-02504, Rapid Shutdown. The #1 HPFW Heaters will be bypassed and isolated using DB-OP-06229, High Pressure Feedwater Heater System Operation. Once HPFW Heater Train 1 is bypassed/ isolated the scenario can proceed to the next event.

When event 3 is cued by the Lead Evaluator the Pressurizer Temperature Transmitter TE RC15-1 will fail low resulting in lowering pressurizer level indication (temperature compensated) and increased makeup flow as MU32, Makeup Flow Controller, responds to the failure. The crew will diagnose the failure and enter abnormal procedure DB-OP-02513, Pressurizer System Abnormal Operations, and place MU32 in hand to control pressurizer level. Alternate temperature input to pressurizer temperature (TE RC15-2) will be verified functional and selected, then MU32 can be returned to automatic control. If pressurizer level exceeds 228 inches compensated (147 inches uncompensated) during the failure then Technical Specification 3.4.9 will be entered for the Pressurizer.

Event 4 will be initiated by the Lead Evaluator resulting in an isolable steam leak and the loss of #2 AFP. The crew will respond to annunciator 12-2-A, SG 1 to AFP 2 Mn Stm Press Lo, and implement abnormal procedure DB-OP-02525, Steam Leaks. The steam leak will be determined to be in AFPT Room 2, and attachment 1 of DB-OP-02525 will be used to isolate the steam leak. The Unit Supervisor will review applicable Technical Specifications and enter 3.7.5 Condition A and B for Inoperable Steam Supply (TS).

At the Lead Evaluator cue event 5 will be initiated which will trigger events 6 and 7. A loss of ICS DC power will occur requiring the crew to implement immediate actions of DB-OP-02532 and trip the reactor and manually initiate and isolate SFRCS. The crew will then implement the Emergency Procedure DB-OP-02000. AFP 1 will not come up to proper speed due to a governor problem and the BOP will start the MDFP per Specific Rule 4 of DB-OP-02000. The MDFP will trip after two minutes resulting in a loss of all feedwater. The ATC will attempt to start the standby makeup pump but it will fail to start. With only one makeup pump in service the crew will commence aligning for MU/HPI/PORV cooling per attachment 4 (**CT-14, Establish MU/HPI Cooling**). When the PORV is opened Adequate Subcooling Margin (SCM) will be lost and all Reactor Coolant Pumps will be tripped (**CT-1, Trip All RCPs**). At the Lead Evaluator discretion the scenario will be terminated.