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DOCKET NUMBER	42661, 42664, 42665
QUESTION #47	DG1 is manually started for post maintenance testing: • DIESEL GEN 1 BKR EG1 is open. • Engine driven lube oil pump shaft completely shears. What condition FIRST trips the Diesel Generator? A. Low Lube Oil Pressure B. High Lube Oil Temperature C. Low Turbocharger Oil Pressure D. High Thrust Bearing Oil Temperature
ANSWER	A. Low Lube Oil Pressure
REFERENCE	2.2.20 {Standby AC Power System (Diesel Generator)} 14.17.1 (DG-1 Annual Calibration) VM-0245 (COOPER BESSEMER CO. KSV16T Emergency Diesel Generator) KSV-46-5 (Lube Oil Schematic) APA 117.10-IC-09 (Composite Control Air Schematic)
COMMENT	The Low Lube Oil Pressure Trip is bypassed for 50 to 70 seconds following a DG start signal. When the DG is manually started, the Pre-Post pump is running with the solenoid supply valve (DGLO-SOV-DG1 (20TLO)) to the Turbo bearings open (opens on Push Button start or DG start). As the DG speed rises to rated (required within 14 seconds per TS operability), the Engine driven lube oil pump speed rises along with its discharge pressure and flow. When discharge pressure reaches 24 psig (~550 rpm), the Pre-Post pump shuts down. Now with the DG running at rated speed (600 rpm) the Engine driven lube oil pump shaft shears. Lube oil pressure rapidly lowers which reduces Turbo Bearing supply pressure below the trip setpoint of 4 psig (no load setpoint) while the Low Lube Oil pressure trip (20 psig) remains bypassed for an additional 36 to 56 seconds. This question requires making an assumption of how long following DG start that the Engine driven lube oil pump shaft shears. Since no time is provided for how long the DG is running idle (no load), the candidate assumed the Lube oil pump failure occurred within 70 seconds of start making answer C correct.
RECOMMENDATION	The stem did NOT provide all the necessary information requiring the candidate to assume how long the DG had been running unloaded. Recommend accepting both Answers A & C as correct.
FACILITY POSITION	Supports the recommended change.
FACILITY REPRESENTATIVE SIGNATURE	

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The attached references show that the 20 psig Low Lube Oil pressure trip is bypassed for approximately 50 to 70 seconds during DG start. Per drawing APA 117.10-IC-09, this is accomplished by venting off DGSA-ACC-1 through DGSA-FCV-25 (DG-1 LOW LUBE OIL LOCKOUT 125 PSIG AIR BLEED-OFF TIMING) which is calibrated for 50 to 70 seconds IAW procedure 14.17.1 ((DG-1 Annual Calibration). The Low Turbocharger Lube Oil pressure trip has no bypass during startup and the setpoint is variable from 4 psig (unloaded) to 19 psig (full load).

CALIBRATION PROCEDURE

5.5 **DGLO-FREG-1, DG-1 MAIN ENGINE LOW LUBE OIL PRESSURE SHUTDOWN VALVE**

5.5.1 Turn DGSA-V-163 (Auxiliary and Lube Oil Panel) handle toward test port and ensure 1/4" Swagelok plug is installed.

5.5.2 Connect DTE oil test pump and Crystal 33 to DGLO-V-52 (Auxiliary and Lube Oil Panel).

5.5.3 Open DGLO-V-52.

5.5.4 Close DGLO-V-42 (Auxiliary and Lube Oil Panel)

5.5.5 Apply ~ 50 psig to reset DGLO-FREG-1.

5.5.6 Notify personnel to stay clear of fuel racks while Steps 5.5.7 and 5.5.8 are performed.

5.5.7 Open DGSA-V-106 and allow air control system to reset, then close DGSA-V-106.

5.5.8 Slowly lower oil test pressure until DGLO-FREG-1 trips (20 psig) (indicated by fuel racks tripping) and record AS FOUND TRIP value on Attachment 2, Table 2.

5.5.9 IF AS FOUND TRIP value is not within tolerance, THEN adjust DGLO-FREG-1, repeat Steps 5.5.5 through 5.5.8, and record AS LEFT TRIP value on Attachment 2, Table 2.

5.5.10 (Independent Verification) Release test pressure, close DGLO-V-52, and remove test equipment.

Performed By: _____

Verified By: _____

5.5.11 (Independent Verification) Open DGLO-V-42.

Performed By: _____

Verified By: _____

5.5.12 (Independent Verification) Turn DGSA-V-163 handle toward sensing line port.

Performed By: _____

Verified By: _____

5.6 DGSA-FCV-25, DG-1 LOW LUBE OIL PRESS LOCKOUT 125 PSIG AIR BLEED-OFF TIMING

5.6.1 Remove vent tube and connect nitrogen supply set at 125 psig to vent port of DGSA-FCV-25 (LBAS Panel).

5.6.2 Pressurize DGSA-ACC-1 to 125 psig with nitrogen supply.

5.6.3 Notify personnel to stay clear of fuel racks while Steps 5.6.4 and 5.6.5 are performed.

5.6.4 Open DGSA-V-106 and allow air control system to reset, then close DGSA-V-106.

NOTE – Timing starts when nitrogen supply is vented.

5.6.5 Isolate and vent 125 psig nitrogen supply, measure time required for DGSA-AOV-DG1(USY9) to trip, and record AS FOUND time on Attachment 2, Table 3.

5.6.6 IF AS FOUND time is not within tolerance, THEN adjust DGSA-FCV-25, repeat Steps 5.6.2 through 5.6.5, and record AS LEFT time on Attachment 2, Table 3.

5.6.7 Remove nitrogen supply test equipment from DGSA-FCV-25 and install vent tube.

5.7 DGLO-FREG-5, DG-1 TURBOCHARGER LOW LUBE OIL SHUTDOWN VALVE

5.7.1 Ensure DGLO-V-48 (Auxiliary and Lube Oil Panel) is closed.

5.7.2 Close DGLO-V-50 (Auxiliary and Lube Oil Panel).

5.7.3 Connect DTE oil test pump and Crystal 33 LP port to DGLO-V-48.

5.7.4 Open DGLO-V-48.

5.7.5 Close DGSA-V-157 (Auxiliary and Lube Oil Panel).

5.7.6 Turn DGSA-V-165 (Auxiliary and Lube Oil Panel) handle toward test port and ensure 1/4" Swagelok plug is installed.

5.7.7 Connect air pressure source and Crystal 33 LP port to DG-V-9 (Auxiliary and Lube Oil Panel).

5.7.8 Turn DG-V-9 (Auxiliary and Lube Oil Panel) handle toward test port.

5.7.9 Verify DGLO-FREG-5 actuation at each set of test pressures listed in Attachment 2, Table 4, per following:

5.7.9.1 Set pressure at DG-V-9 per Attachment 2, Table 4.

5.7.9.2 Increase pressure at DGLO-V-48 to a value slightly above the trip value in Attachment 2, Table 4, to close DGLO-FREG-5.

5.7.9.3 Open DGSA-V-106 and allow air control system to reset, then close DGSA-V-106.

5.7.9.4 Decrease pressure at DGLO-V-48 and record AS FOUND trip on Attachment 2, Table 4.

5.7.9.5 Repeat Steps 5.7.9.1 through 5.7.9.4 for each test pressure listed on Attachment 2, Table 4.

5.7.10 IF AS FOUND values are not within tolerance, THEN adjust DGLO-FREG-5, repeat Step 5.7.9, and record AS LEFT values on Attachment 2, Table 4.

5.7.11 (Independent Verification) Release test pressure, turn DG-V-9 handle to pointing down, and remove test equipment.

Performed By: _____

Verified By: _____

5.7.12 (Independent Verification) Release test pressure, close DGLO-V-48, and remove test equipment.

Performed By: _____

Verified By: _____

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ATTACHMENT 2 SECTION 5 DATA

TABLE 1 - DGSA-PRV-1 AND DGSA-PRV-5

INSTRUMENT NUMBER	AS FOUND psig	AS LEFT psig	DESIRED VALUE psig	CALIBRATION TOLERANCE psig
DGSA-PRV-1 (DGSA-PI-10)			80	80 to 88
DGSA-PRV-5 (DGSA-PI-14)			30	

This is the Low Lube Oil trip pressure.

TABLE 2 - DGLO-FREG-1

AS FOUND TRIP psig	AS LEFT TRIP psig	DESIRED VALUE psig	CALIBRATION TOLERANCE psig
		20 ↓	18 to 22

TEST EQUIPMENT USED: _____ CALIBRATION DUE DATE: _____

TABLE 3 - DGSA-FCV-25

AS FOUND seconds	AS LEFT seconds	CALIBRATION TOLERANCE seconds
		50 to 70

TEST EQUIPMENT USED: _____ CALIBRATION DUE DATE: _____

This is the time that the Low Lube Oil trip pressure is bypassed during DG start.

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This is the Turbocharger Low Lube Oil trip pressure with the DG unloaded.

TABLE 4 - DGLO-FREG-5

TEST PRESSURE AT DG-V-9 psig	TEST PRESSURE AT DGLO-V-48 psig	AS FOUND OPEN psig	AS LEFT OPEN psig	DESIRED VALUE psig	CALIBRATION TOLERANCE psig
0	≥ 4			4.0	4.0 to 5.0
3	≥ 7			7.0	7.0 to 8.0
8	≥ 10			10.0	10.0 to 11.0
9	≥ 13			13.0	13.0 to 14.0
12	≥ 16			16.0	16.0 to 17.0
15	≥ 19			19.0	19.0 to 20.0

TEST EQUIPMENT USED: _____ CALIBRATION DUE DATE: _____

TEST EQUIPMENT USED: _____ CALIBRATION DUE DATE: _____

TABLE 5 - DGSA-FREG-9

AS FOUND TRIP °F	AS LEFT TRIP °F	DESIRED VALUE °F	CALIBRATION TOLERANCE °F
		205 ↑	200 to 210

TEST EQUIPMENT USED: _____ CALIBRATION DUE DATE: _____

Proprietary reference redacted
from public ADAMS file

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DOCKET NUMBER	42661, 42662, 42664, 42665, 42659, 441985
QUESTION #63	The plant is operating at 90% power. What is the impact on Main Steam steady state temperature if a control room operator opens a Safety Relief Valve (SRV)? **Main Steam steady state temperature will…** A. rise as the result of the turbine governor valves throttling closed thereby raising steam pressure and temperature. B. rise as the result of reactor power rising. C. lower as the result of the turbine pressure control system offset lowering steam pressure and temperature. D. remain constant because the turbine pressure control system offset will compensate for the open SRV.
ANSWER	C. lower as the result of the turbine pressure control system offset lowering steam pressure and temperature.
REFERENCE	2.2.77.1 (Digital Electro-Hydraulic (DEH) Control System) 6.RCS.601 (Technical Specification Monitoring of RCS Heatup/Cooldown Rate)
COMMENT	The open SRV reduces Main Steam pressure (and temperature) while the turbine pressure control (DEH) system compensates by throttling governor valves closed to restore Main Steam pressure back to the pressure setpoint. Answer C states that the DEH system response causes Main Steam pressure and corresponding temperature to be lower. This resulted in Answer C being interpreted as DEH causing pressure (temperature) to lower Main Steam pressure (temperature), vice the SRV opening causing pressure (temperature) to lower. At approximately 90% power, the main steam equalizing header pressure is approximately 951 psig. Following a SRV opening and system allowed to reach steady state, equalizing header pressure is approximately 948 psig. Although the final pressure is slightly lower, a 2 to 4 psig change in Main Steam pressure does not change the Main Steam indicated temperature (calculated per steam table function on the DEH HMI - at rated pressure temperature remains the same with a 7 psig change in pressure) by an amount which would be observable by an operator with the plant operating at 90% power. This makes Answer D the only possible correct choice.
RECOMMENDATION	Answer C is a false statement due to the wording providing indication of DEH as the cause of the lowered steam pressure (temperature). Answer D is the only operationally valid correct answer. Recommend changing the Correct Answer to D.
FACILITY POSITION	Supports the recommended change.
FACILITY REPRESENTATIVE SIGNATURE	

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ATTACHMENT 9 INFORMATION SHEET

1. DISCUSSION

1.1 FUNCTION

1.1.1 The DEH Control System generates positioning signals for the governor and bypass valves in order to control reactor pressure and main turbine generator speed or load.

1.2 OPERATING CHARACTERISTICS

1.2.1 The main turbine valves are positioned by the Turbine High Pressure Fluid (EH) System which in turn is controlled by DEH. DEH compares several input signals to determine the correct operating mode (1 through 4) and develops an appropriate output signal. This output signal controls the position of the governor and/or bypass valves to maintain steam pressure, turbine speed, and/or turbine load at a desired value. In Mode 1, DEH positions the bypass valves to control steam pressure. In Mode 2, DEH positions the governor valves to control turbine speed and the bypass valves to control steam pressure. In Mode 3, DEH positions the governor valves to control turbine load and the bypass valves to control steam pressure. In Mode 4, DEH positions the governor valves to control steam pressure.

1.2.2 The DEH System consists of a Triple Modular Redundant Digital Control System provided by Triconex Systems, Inc. and is referred to as the Control Tricon.

1.2.2.1 The Control Tricon is a fault-tolerant programmable logic controller (PLC) that uses a triple modular redundant (TMR) architecture in which three parallel control paths are integrated into a single overall system. The system is designed to use two-out-of-three voting with the intent of providing uninterrupted process operation with no single point of random hardware failure.

1.2.2.2 The Control Tricon consists of one main chassis and one expansion chassis. The main chassis contains: (1) two redundant power supply modules, (2) three main processor modules, (3) communications modules, and (4) input and output (I/O) modules. The expansion chassis contains: (1) two redundant power supply modules, (2) input and output modules, (3) one relay output module, and (4) one pulse input module.

1.2.2.3 The DEH Control Tricon System has the following characteristics:

a Three throttle header pressure transmitters for Control Room indication and system control function.

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ATTACHMENT 2 P-SAT/T-SAT CONVERSION TABLE

PSIG	°F	PSIG	°F	PSIG	°F	PSIG	°F	PSIG	°F	PSIG	°F
228-230	399	323-325	429	444-447	459	597-601	489	787-793	519	1020-1027	549
231-233	400	326-329	430	448-452	460	602-607	490	794-800	520	1028-1036	550
234-236	401	330-333	431	453-457	461	608-613	491	801-807	521	1037-1045	551
237-238	402	334-336	432	458-461	462	614-619	492	808-814	522	1046-1054	552
239-241	403	337-340	433	462-466	463	620-625	493	815-821	523	1055-1062	553
242-244	404	341-344	434	467-471	464	626-630	494	822-829	524	1063-1071	554
245-247	405	345-347	435	472-475	465	631-637	495	830-836	525	1072-1080	555
248-250	406	348-351	436	476-480	466	638-642	496	837-843	526	1081-1089	556
251-253	407	352-355	437	481-485	467	643-648	497	844-851	527	1090-1098	557
254-256	408	356-359	438	486-490	468	649-654	498	852-858	528	1099-1107	558
257-259	409	360-363	439	491-495	469	655-661	499	859-866	529	1108-1116	559
260-262	410	364-367	440	496-500	470	662-667	500	867-873	530	1117-1126	560
263-265	411	368-371	441	501-505	471	668-673	501	874-881	531		
266-268	412	372-375	442	506-510	472	674-679	502	882-889	532		
269-271	413	376-379	443	511-515	473	680-686	503	890-896	533		
272-275	414	380-383	444	516-520	474	687-692	504	897-904	534		
276-278	415	384-387	445	521-525	475	693-698	505	905-912	535		
279-281	416	388-391	446	526-530	476	699-705	506	913-920	536		
282-284	417	392-395	447	531-536	477	706-711	507	921-928	537		
285-288	418	396-399	448	537-541	478	712-718	508	929-936	538		
289-291	419	400-403	449	542-546	479	719-724	509	937-944	539		
292-294	420	404-408	450	547-551	480	725-731	510	945-952	540		
295-297	421	409-412	451	552-557	481	732-738	511	953-960	541		
298-301	422	413-416	452	558-562	482	740-744	512	961-968	542		
302-304	423	417-421	453	563-568	483	745-751	513	969-977	543		
305-308	424	422-425	454	569-573	484	752-758	514	978-985	544		
309-311	425	426-429	455	574-579	485	759-765	515	986-993	545		
312-315	426	430-434	456	580-584	486	766-772	516	994-1002	546		
316-318	427	435-438	457	585-590	487	773-779	517	1003-1010	547		
319-322	428	439-443	458	591-596	488	780-786	518	1011-1019	548		

7 psig change in steam pressure results in no observable temperature change.

ILT 2013 NRC Written Exam Retake Analysis

- 10 Questions ≥50 missed.
- 1 RO & 1 SRO question 100% missed.
- 2 questions are being reviewed for NRC comments and revision/correction.
- 1 question will be enhanced to clarify IAW TRM.
- Knowledge deficiencies identified:
  1. SRO knowledge of time Temporary Alterations are allowed installed without performing 10CFR50.59 review.
  2. RO knowledge of the following:
     - Why RFP LO pumps are locked out during control room abandonment.
     - Number of ADS valve cycles the accumulators are designed for.
     - ADS surveillance acceptance criteria for verifying valve is open during startup.
     - Required TRM PAM Instrumentation.
     - Identifying Safety Limit violations.
     - How reactor & equalizing header pressure change from no load to full turbine load.
     - The correct order to Tagout a pump and why.

600000 Plant Fire On Site
Knowledge of the reasons for the following responses as they apply to plant fire on site: (CFR: 41.4, 41.5, 41.7, 41.10 / 45.8)
AK3.04 Actions contained in the abnormal procedure for plant fire on site

Question: 19

The plant is operating at 100% when the Shift Manager directs a Control Room evacuation due to a fire in the control room.

Why are all the AC powered Reactor Feedwater Pump lube oil pump control switches placed in PULL-TO-LOCK IAW Procedure 5.4FIRE-S/D (Fire Induced Shutdown from Outside Control Room)?

To ensure...

A. a reactor water overfill event is prevented.

B. reactor water level is intentionally lowered to aid in FW preheating.

C. automatic start of DC lube oil pumps to maintain RFP bearing lubrication during pump operation.

D. automatic start of DC lube oil pumps to maintain RFP bearing lubrication during pump coast down.

Answer:
A. a reactor water overfill event is prevented.

50% - 3 candidates chose Answer D which is the result of this action vs. the reason IAW Procedure 5.4FIRE-S/D. This is a knowledge deficiency which has been remediated.

Explanation:
Prior to evacuation of the Control Room, the RFP AC Lube oil pumps are placed in PULL-TO-LOCK to prevent an overfill event from occurring. This action results in the RFPs tripping due to low bearing oil pressure with DC Lube oil pumps auto starting to provide bearing lubrication during pump coast down. Reactor water level lowers and HPCI may be used for RPV level control from the ASD Panel.

21800 ADS – Ability to monitor automatic operations of the automatic depressurization system including: (CFR: 41.7 / 45.7)
A3.01 ADS valve operation

Question: 39

Which of the following completes the statement below with the plant operating at power?

The Safety Relief Valves associated with the ADS system are normally aligned with ____(1)____ to open and the accumulators associated with them are sized to allow a MINIMUM of ____(2)____ valve cycles at **70% of design** drywell pressure.

A. (1) Nitrogen
(2) 5

B. (1) Instrument Air
(2) 5

C. (1) Nitrogen
(2) 2

D. (1) Instrument Air
(2) 2

Answer:
C. (1) Nitrogen
(2) 2

50% - 3 candidates chose Answer A which would be correct if the question asked for number of cycles at atmospheric pressure. This is a knowledge deficiency which has been remediated.

Explanation:

1.2.4 An accumulator and monitoring instrumentation is installed to provide nitrogen for five actuations at atmospheric drywell pressure (two actuations at 70% drywell design pressure) of relief valve Pilot MS-RV-71A, MS-RV-71B, MS-RV-71C, MS-RV-71E, MS-RV-71G, and MS-RV-71H. Relief valves MS-RV-71D and MS-RV-71F have larger accumulators to provide for 14 actuations at 30 psig drywell pressure since these valves cycle at lower setpoints as part of the ADS LLS logic.

1.2.5 Relief valves MS-RV-71E, MS-RV-71F, and MS-RV-71G can be operated from the Alternate Shutdown (ASD) Panel in the ASD Room per Procedure 5.4FIRE-S/D.

239002 SRVs –
2.2.12 Knowledge of surveillance procedures. (CFR: 41.10 / 45.13)

Question: 41

While performing Surveillance 6.ADS.201, ADS Manual Valve Actuation (IST) during startup following a refuel outage, the BOP Operator reports that SRV RV-71 E Control Switch has been placed to OPEN.

When conditions stabilize, which of the following indications validate that SRV RV-71 E is full open IAW 6.ADS.201?

A. Main Generator output lowers.

B. Total indicated steam flow rises.

C. PMIS temperatures within MAX ΔT.

D. Bypass valves throttle in the closed direction.

Answer:
D. Bypass valves throttle in the closed direction.

50% - 3 candidates chose Answer C. Although PMIS temperatures are monitored & recorded during the performance of this surveillance, there is no acceptance criteria for MAX ΔT for verification of BPV opening. This is a knowledge deficiency which has been remediated.

Explanation:
The acceptance criteria for 6.ADS.201 specify the valid parameters for verifying that an SRV has properly opened. The operability limit specified is a change of BPV Position ≥2%.

264000 EDGs – Knowledge of the effect that a loss or malfunction of the following will have on the emergency generators (diesel): (CFR: 41.7)
K6.03 Lube oil pumps

Question: 47

DG1 is manually started for post maintenance testing:

- DIESEL GEN 1 BKR EG1 is open.
- Engine driven lube oil pump shaft completely shears.

What condition FIRST trips the Diesel Generator?

A. Low Lube Oil Pressure

B. High Lube Oil Temperature

C. Low Turbocharger Oil Pressure

D. High Thrust Bearing Oil Temperature

Answer:
A. Low Lube Oil Pressure

50% - 3 candidates chose Answer C. Based upon the stem not providing how long the DG has been running, both Answers A & C are correct. This question is being evaluated for accepting 2 correct answers due to the Low Lube Oil Pressure trip being bypassed for 50 to 70 seconds following DG start signal.

Explanation:
When the diesel generator is manually started all the diesel generator trips are in effect. With the loss of the engine driven oil pump and the loss of all lube oil pressure, the diesel generator trips at <20 psig lube oil pressure. This trip is only bypassed on an automatic start. This signal is the first that trips the DG and anything beyond that cannot trip the DG because it is already tripped.

215004 Source Range Monitor –
2.4.3 Ability to identify post-accident instrumentation. (CFR: 41.6 / 45.4)

Question: 52

Which one of the following is a Post Accident Monitoring (PAM) instrument?

A. Source Range Monitor (SRM)

B. Traversing In-core Probe (TIP)

C. Condensate Storage Tank Level Indicator

D. Reactor Building Ventilation Exhaust Plenum Radiation Monitors

Answer:
A. Source Range Monitor (SRM)

50% - 2 candidates chose Answer B and 1 chose C. Neither TIPs nor RB Vent Exh RMs are specified as PAM instruments. Question to be enhanced by adding "IAW TLCO 3.3.3 Post Accident Instrumentation (PAM) Instrumentation". This is a knowledge deficiency which has been remediated.

Explanation:
TLCO 3.3.3 Post Accident Instrumentation (PAM) Instrumentation, Table 3.3.3-1 specifies the instruments that are post accident instrumentation. The neutron monitoring systems in the table are the SRMs, IRMs, and APRMs. The only instrument listed in the options that is a PAM instrument is the SRM.

202001 Recirculation
G2.2.22- Knowledge of limiting conditions for operations and safety limits. (CFR: 41.10 / 43.2 / 45.13)

Question: 56

Reactor power is steady at 26%.

What is the HIGHEST Core Flow which is a TS Safety Limit Violation?

CORE FLOW

A. 9%

B. 10%

C. 11%

D. 13%

Answer:
A. 9%

50% - 3 candidates chose Answer B. If core flow is < 10% reactor power is required to be ≤ 25%. This is a knowledge deficiency which has been remediated.

Explanation:
TS requires if either reactor steam dome pressure is < 785 psig or core flow < 10%, THERMAL POWER shall be ≤ 25%. With reactor power at 26%, core flow at 9% violates the safety limit.

241000 Knowledge of the operational Implications of the following concepts as they apply to REACTOR/TURBINE PRESSURE REGULATING SYSTEM: (CFR: 41.5 / 45.3)
K5.05 Turbine inlet pressure vs. turbine load

Question: 61

Which of the following identifies how main turbine equalizing header pressure is impacted as turbine load is raised from no load to full turbine load?

Main turbine equalizing header pressure will...

A. rise but less than reactor steam dome pressure.

B. remain constant at the main turbine pressure setpoint.

C. rise by the same amount as reactor steam dome pressure.

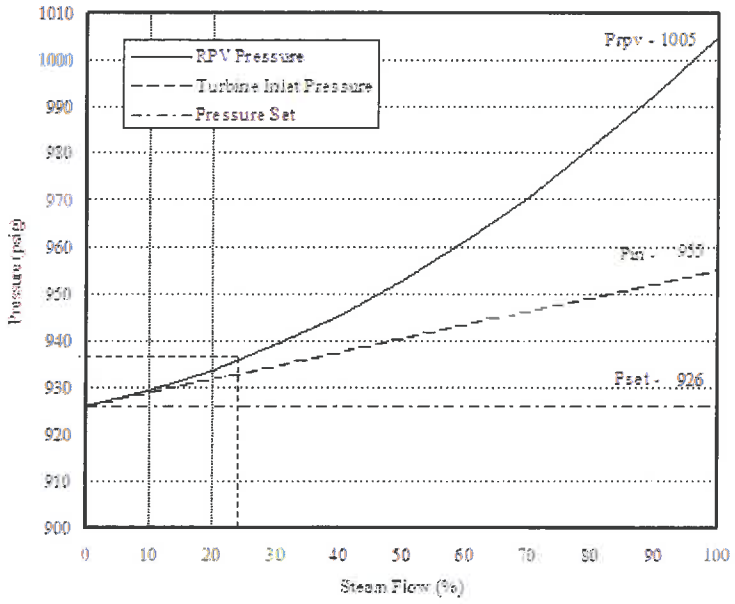
D. lower slightly as the main turbine governor valves throttle open.

Answer:
A. rise but less than reactor steam dome pressure.

66.7% - 3 candidates chose Answer B and 1 chose C. No changes required. This is a knowledge deficiency which has been remediated.

Explanation:
The main turbine electro-hydraulic pressure control system is designed to operate with a 30 psig control band. The pressure control signal is taken from the equalizing header. No load equalizing header pressure is typically about 920 psig, so equalizing header pressure will increase to approximately 950 psig when at full rated load. This control band is required for stable operation of the main turbine control valves.

Figure 3 – RPV and Turbine Inlet Pressure vs Steam Flow



239001 Ability to predict and/or monitor changes in parameters associated with operating the MAIN AND REHEAT STEAM SYSTEM controls including: (CFR: 41.5 / 45.5)
A1.02 Main steam temperature

Question: 63

The plant is operating at 90% power.

What is the impact on Main Steam steady state temperature if a control room operator opens a Safety Relief Valve (SRV)?

Main Steam steady state temperature will...

A. rise as the result of the turbine governor valves throttling closed thereby raising steam pressure and temperature.

B. rise as the result of reactor power rising.

C. lower as the result of the turbine pressure control system offset lowering steam pressure and temperature.

D. remain constant because the turbine pressure control system offset will compensate for the open SRV.

Answer:
C. lower as the result of the turbine pressure control system offset lowering steam pressure and temperature.

100% - All candidates chose Answer D. Answer C wording implies DEH lowered Main Steam pressure & temperature (DEH malfunction) which is incorrect. This question is being evaluated for changing the correct answer to D because DEH returns (raises) pressure back to the pressure setpoint (original temperature) which does not provide an observable temperature change.

Explanation:
When the SRV is opened, initially RPV and main steam pressure **will** begin to lower. The main turbine pressure control system will sense the reduction in pressure and throttle the governor valves closed to raise pressure. However, the main turbine electro-hydraulic pressure control system is designed to operate with a 30 psig control band. Since the steam supply pressure is lower with the SRV open, the pressure maintained by the pressure regulating system will also be lower. With a lower steam pressure being maintained, and given the steam system is at saturation conditions, steady state main steam temperature **will** lower.

2.2.13 Knowledge of tagging and clearance procedures. (CFR: 41.10 / 45.13)

Question: 69

Which of the following identifies the FIRST two tagging order steps for placing a system pump under clearance, and the reason for this order IAW Procedure 0.9 (Tagout)?

OPEN the pump breaker and then close the...

A. suction valve to minimize draining time.

B. discharge valve to minimize draining time.

C. suction valve to protect low pressure components.

D. discharge valve to protect low pressure components.

Answer:
D. discharge valve to protect low pressure components.

50% - 3 candidates chose 3 different Answers (A, B,& C). No changes required. This is a knowledge deficiency which has been remediated.

Explanation:
Requires knowledge of tagging procedure 0.9. Procedure 0.9 provides guidance for pump tagging to remove the power source first. If isolating the pump, the discharge valve is closed before the suction valve to prevent possible over-pressurization of low pressure components on the suction side.

2.2.11 Knowledge of the process for controlling temporary design changes. (CFR: 41.10 / 43.3 / 45.13)

Question: 96

The plant is operating at power in Mode 1.

What is the MAXIMUM time a Temporary Alteration In Support of Maintenance (TASM) can be installed on plant equipment WITHOUT performing a 10CFR50.59 Review IAW Procedure 3.4.4 (Temporary Configuration Change)?

A. 30 days

B. 60 days

C. 90 days

D. 120 days

ANSWER:
C. 90 days

100% - Both SROs chose Answer A. This is a knowledge deficiency which has been remediated.

Explanation:
A temporary alteration is necessary to support maintenance if it makes the maintenance activity easier, or the maintenance activity has been planned to allow prompt restoration. TASMs have regulatory considerations specific to duration under 10CFR50.59. Engineering Procedure 3.4.4, Temporary Configuration Change, Attachment 7, Step 4.1.1 and 4.1.2 describe the requirements for a 10CFR50.59 review prior to installation if it is expected to be in place > 90 days, or if after installation, it is going to be installed > 90 days. The procedure states that if a TASM that was installed and originally not expected to exceed 90 day that a 50.59 review should be performed. Procedure 0-EN-HU-106, Procedure and Work Instruction Use and Adherence, Step 3.12 defines should and states: **Should** - Denotes strong recommendation and indicates an action that is expected to be performed as described unless there is a compelling reason not to do so.