

ATTACHMENT 5

Senior Reactor Operator Surveys

When answering the following question assume a single unit BWR similar to LGS. The unit only has 2 divisions of Diesels.

Consider the following procedure guidance on when to enter an ELAP per E-1 (This is different than LGS)

IMMEDIATE OPERATOR ACTIONS

1. Within a maximum of 1 hour, the Shift Manager SHALL determine if an Extended Loss of AC Power (ELAP) exists.

Extended Loss of AC Power (ELAP)

1. A total and sustained (>1 hour) loss of both offsite and onsite AC power sources as a result of a postulated Beyond Design Basis External Event (BDBEE) which is expected to exceed the 4 hour SBO coping period.

4.4 STATION BLACKOUT (SBO) «CM-1»

1. The Shift Manager shall conduct a continuous assessment of the prognosis for restoration of power to Div 1 and/or Div 2.

IF Within 1 HOUR of the Station Blackout, there has not been action taken that would provide a HIGH ASSURANCE of restoration of Div 1 and/or Div 2 power within the 4 hour SBO coping period,

THEN STOP executing Station Blackout actions and immediately execute CPS 4306.01 Extended Loss of AC Power/Loss of UHS.

- ☞ At this point, executing CPS 4306.01 Extended Loss of AC Power/Loss of UHS takes precedence over attempts to restore offsite AC and/or DGs.

2. The Shift Manager shall continue to monitor SBO recovery actions.

IF While executing SBO actions, recovery actions prove to be unsuccessful

THEN STOP executing Station Blackout actions and immediately execute CPS 4306.01 Extended Loss of AC Power/Loss of UHS.

Assume 2 hours to perform the S92 procedure to restore an inoperable/unavailable D/G.
Assume all actions for the 4 hour coping strategy can/will be performed.

Answer all 3 questions

Initial Conditions:

Unit is in OPCON 4

Reactor Level is 85"

D-11 D/G is tagged oos for maintenance

At T=0 Undervoltage alarms are received on the 101 and 201 busses indicating a loss of off site power.

At T= 10 sec D-12 failure to start annunciator is received in the MCR. The PRO identifies that the D-12 D/G fails to start and dispatches an EO to the D/G.

At T=15 minutes the EO calls the MCR and states that he found both starting air receiver outlet valves CLOSED for the D-12 D/G

1. Do you declare an ELAP at t=1 hr?

No

2. Assume same initial conditions, but EO makes the same report at T=55 min?

No

3. Assume same initial conditions, but EO makes the same report at t=4 hours?

Yes

When answering the following question assume a single unit BWR similar to LGS. The unit only has 2 divisions of Diesels.

Consider the following procedure guidance on when to enter an ELAP per E-1 (This is different than LGS)

IMMEDIATE OPERATOR ACTIONS

1. Within a maximum of 1 hour, the Shift Manager SHALL determine if an Extended Loss of AC Power (ELAP) exists.

Extended Loss of AC Power (ELAP)

1. A total and sustained (>1 hour) loss of both offsite and onsite AC power sources as a result of a postulated Beyond Design Basis External Event (BDBEE) which is expected to exceed the 4 hour SBO coping period.

4.4 STATION BLACKOUT (SBO) «CM-1»

1. The Shift Manager shall conduct a continuous assessment of the prognosis for restoration of power to Div 1 and/or Div 2.

IF Within 1 HOUR of the Station Blackout, there has not been action taken that would provide a HIGH ASSURANCE of restoration of Div 1 and/or Div 2 power within the 4 hour SBO coping period,

THEN STOP executing Station Blackout actions and immediately execute CPS 4306.01 Extended Loss of AC Power/Loss of UHS.

- ☞ At this point, executing CPS 4306.01 Extended Loss of AC Power/Loss of UHS takes precedence over attempts to restore offsite AC and/or DGs.

2. The Shift Manager shall continue to monitor SBO recovery actions.

IF While executing SBO actions, recovery actions prove to be unsuccessful

THEN STOP executing Station Blackout actions and immediately execute CPS 4306.01 Extended Loss of AC Power/Loss of UHS.

Assume 2 hours to perform the S92 procedure to restore an inoperable/unavailable D/G.
Assume all actions for the 4 hour coping strategy can/will be performed.

Answer all 3 questions

Initial Conditions:

Unit is in OPCON 4

Reactor Level is 85"

D-11 D/G is tagged oos for maintenance

At T=0 Undervoltage alarms are received on the 101 and 201 busses indicating a loss of off site power.

At T= 10 sec D-12 failure to start annunciator is received in the MCR. The PRO identifies that the D-12 D/G fails to start and dispatches an EO to the D/G.

At T=15 **minutes** the EO calls the MCR and states that he found both starting air receiver outlet valves CLOSED for the D-12 D/G

1. Do you declare an ELAP at t=1 hr?

No, there is high assurance that Div 2 On-site AC power can be restored within the 4 hour coping strategy.

2. Assume same initial conditions, but EO makes the same report at T=55 **min**?

No, there is a high assurance that Div 2 On-site AC power can be restored within the 4 hour coping strategy.

3. Assume same initial conditions, but EO makes the same report at t=4 **hours**?

Yes, declare an ELAP at the 1 hour mark. At that point, there is no action taken that can assure that some AC power can be restored within the 4 hour coping strategy.

When answering the following question assume a single unit BWR similar to LGS. The unit only has 2 divisions of Diesels.

Consider the following procedure guidance on when to enter an ELAP per E-1 (This is different than LGS)

IMMEDIATE OPERATOR ACTIONS

1. Within a maximum of 1 hour, the Shift Manager SHALL determine if an Extended Loss of AC Power (ELAP) exists.

Extended Loss of AC Power (ELAP)

1. A total and sustained (>1 hour) loss of both offsite and onsite AC power sources as a result of a postulated Beyond Design Basis External Event (BDBEE) which is expected to exceed the 4 hour SBO coping period.

4.4 STATION BLACKOUT (SBO) «CM-1»

1. The Shift Manager shall conduct a continuous assessment of the prognosis for restoration of power to Div 1 and/or Div 2.

IF Within 1 HOUR of the Station Blackout, there has not been action taken that would provide a HIGH ASSURANCE of restoration of Div 1 and/or Div 2 power within the 4 hour SBO coping period,

THEN STOP executing Station Blackout actions and immediately execute CPS 4306.01 Extended Loss of AC Power/Loss of UHS.

☞ **At this point, executing CPS 4306.01 Extended Loss of AC Power/Loss of UHS takes precedence over attempts to restore offsite AC and/or DGs.**

2. The Shift Manager shall continue to monitor SBO recovery actions.

IF While executing SBO actions, recovery actions prove to be unsuccessful

THEN STOP executing Station Blackout actions and immediately execute CPS 4306.01 Extended Loss of AC Power/Loss of UHS.

Assume 2 hours to perform the S92 procedure to restore an inoperable/unavailable D/G.
Assume all actions for the 4 hour coping strategy can/will be performed.

Answer all 3 questions

Initial Conditions:

Unit is in OPCON 4

Reactor Level is 85"

D-11 D/G is tagged oos for maintenance

At T=0 Undervoltage alarms are received on the 101 and 201 busses indicating a loss of off site power.

At T= 10 sec D-12 failure to start annunciator is received in the MCR. The PRO identifies that the D-12 D/G fails to start and dispatches an EO to the D/G.

At T=15 **minutes** the EO calls the MCR and states that he found both starting air receiver outlet valves CLOSED for the D-12 D/G

1. Do you declare an ELAP at t=1 hr? NO

2. Assume same initial conditions, but EO makes the same report at T=55 **min**? NO

3. Assume same initial conditions, but EO makes the same report at t=4 **hours**? NO

When answering the following question assume a single unit BWR. The unit only has 2 divisions of Diesels.

Consider the following procedure guidance on when to enter an ELAP

IMMEDIATE OPERATOR ACTIONS

1. Within a maximum of 1 hour, the Shift Manager SHALL determine if an Extended Loss of AC Power (ELAP) exists.

Extended Loss of AC Power (ELAP)

1. A total and sustained (>1 hour) loss of both offsite and onsite AC power sources as a result of a postulated Beyond Design Basis External Event (BDBEE) which is expected to exceed the 4 hour SBO coping period.

4.4 STATION BLACKOUT (SBO) «CM-1»

1. The Shift Manager shall conduct a continuous assessment of the prognosis for restoration of power to Div 1 and/or Div 2.

IF Within 1 HOUR of the Station Blackout, there has not been action taken that would provide a HIGH ASSURANCE of restoration of Div 1 and/or Div 2 power within the 4 hour SBO coping period,

THEN STOP executing Station Blackout actions and immediately execute CPS 4306.01 Extended Loss of AC Power/Loss of UHS.

- ④ At this point, executing CPS 4306.01 Extended Loss of AC Power/Loss of UHS takes precedence over attempts to restore offsite AC and/or DGs.

2. The Shift Manager shall continue to monitor SBO recovery actions.

IF While executing SBO actions, recovery actions prove to be unsuccessful

THEN STOP executing Station Blackout actions and immediately execute CPS 4306.01 Extended Loss of AC Power/Loss of UHS.

Assume 2 hours to perform the procedure to restore an inoperable/unavailable D/G.
Assume all actions for the 4 hour coping strategy can/will be performed.

Answer all 3 questions

Initial Conditions:

Unit is in OPCON 4

Div 1 D/G is tagged oos for maintenance

At T=0 Undervoltage alarms are received indicating a loss of off site power.

At T= 10 sec Division 2 D/G failure to start annunciator is received in the MCR. The RO identifies that the Div 2 D/G fails to start and dispatches an EO to the D/G.

At T=15 **minutes** the EO calls the MCR and states that he found both starting air receiver outlet valves CLOSED for the Div 2 D/G

1. Do you declare an ELAP at t=1 hr?

No

2. Assume same initial conditions, but EO makes the same report at T=55 min?

No

3. Assume same initial conditions, but EO makes the same report at t=4 hours?

Yes

When answering the following question assume a single unit BWR. The unit only has 2 divisions of Diesels.

Consider the following procedure guidance on when to enter an ELAP

IMMEDIATE OPERATOR ACTIONS

1. Within a maximum of 1 hour, the Shift Manager SHALL determine if an Extended Loss of AC Power (ELAP) exists.

Extended Loss of AC Power (ELAP)

1. A total and sustained (>1 hour) loss of both offsite and onsite AC power sources as a result of a postulated Beyond Design Basis External Event (BDBEE) which is expected to exceed the 4 hour SBO coping period.

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1. The Shift Manager shall conduct a continuous assessment of the prognosis for restoration of power to Div 1 and/or Div 2.

IF Within 1 HOUR of the Station Blackout, there has not been action taken that would provide a HIGH ASSURANCE of restoration of Div 1 and/or Div 2 power within the 4 hour SBO coping period,

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IF While executing SBO actions, recovery actions prove to be unsuccessful

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Assume 2 hours to perform the procedure to restore an inoperable/unavailable D/G.
Assume all actions for the 4 hour coping strategy can/will be performed.

Answer all 3 questions

Initial Conditions:

Unit is in OPCON 4

Div 1 D/G is tagged oos for maintenance

At T=0 Undervoltage alarms are received indicating a loss of off site power.

At T= 10 sec Division 2 D/G failure to start annunciator is received in the MCR. The RO identifies that the Div 2 D/G fails to start and dispatches an EO to the D/G.

At T=15 **minutes** the EO calls the MCR and states that he found both starting air receiver outlet valves CLOSED for the Div 2 D/G

1. Do you declare an ELAP at t=1 hr?

No. Assume 2 hours to perform the procedure to restore an inoperable/unavailable D/G. This is within the 4 hour coping time

2. Assume same initial conditions, but EO makes the same report at T=55 min?

No. Assume 2 hours to perform the procedure to restore an inoperable/unavailable D/G. This is within the 4 hour coping time.

3. Assume same initial conditions, but EO makes the same report at t=4 hours?

Yes, though this should have been declared within the hour with no report of why the D/G was unable to be restored within the 4 hour coping time.

If the assumption of the two hour recovery time is applicable to the Div 1 D/G, and the actions to restore the Div 2 D/G are as simple as opening the receiver outlet valves, I would declare the ELAP and, in parallel, have the operator restore the air receiver and attempt to start the Div 2 D/G. I am assuming that the operator would be available to perform manipulations not to interfere with the actions required for the ELAP. This would provide the shortest path to restoring power to my Div 2 busses. The procedure reference above could lead you to think that you must abandon the D/G in pursuit of ELAP and flex procedure implementation.

When answering the following question assume a single unit BWR similar to LGS. The unit only has 2 divisions of Diesels.

Consider the following procedure guidance on when to enter an ELAP per E-1 (This is different than LGS)

IMMEDIATE OPERATOR ACTIONS

1. Within a maximum of 1 hour, the Shift Manager SHALL determine if an Extended Loss of AC Power (ELAP) exists.

Extended Loss of AC Power (ELAP)

1. A total and sustained (>1 hour) loss of both offsite and onsite AC power sources as a result of a postulated Beyond Design Basis External Event (BDBEE) which is expected to exceed the 4 hour SBO coping period.

4.4 STATION BLACKOUT (SBO) «CM-1»

1. The Shift Manager shall conduct a continuous assessment of the prognosis for restoration of power to Div 1 and/or Div 2.

IF Within 1 HOUR of the Station Blackout, there has not been action taken that would provide a HIGH ASSURANCE of restoration of Div 1 and/or Div 2 power within the 4 hour SBO coping period,

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2. The Shift Manager shall continue to monitor SBO recovery actions.

IF While executing SBO actions, recovery actions prove to be unsuccessful

THEN STOP executing Station Blackout actions and immediately execute CPS 4306.01 Extended Loss of AC Power/Loss of UHS.

Assume 2 hours to perform the S92 procedure to restore an inoperable/unavailable D/G.
Assume all actions for the 4 hour coping strategy can/will be performed.

Answer all 3 questions

Initial Conditions:

Unit is in OPCON 4

Reactor Level is 85"

D-11 D/G is tagged oos for maintenance

At T=0 Undervoltage alarms are received on the 101 and 201 busses indicating a loss of off site power.

At T= 10 sec D-12 failure to start annunciator is received in the MCR. The PRO identifies that the D-12 D/G fails to start and dispatches an EO to the D/G.

At T=15 **minutes** the EO calls the MCR and states that he found both starting air receiver outlet valves CLOSED for the D-12 D/G

1. Do you declare an ELAP at t=1 hr?

NO

2. Assume same initial conditions, but EO makes the same report at T=55 **min**?

No

3. Assume same initial conditions, but EO makes the same report at t=4 **hours**?

Yes

When answering the following question assume a single unit BWR similar to LGS. The unit only has 2 divisions of Diesels.

Consider the following procedure guidance on when to enter an ELAP per E-1 (This is different than LGS)

IMMEDIATE OPERATOR ACTIONS

1. Within a maximum of 1 hour, the Shift Manager SHALL determine if an Extended Loss of AC Power (ELAP) exists.

Extended Loss of AC Power (ELAP)

1. A total and sustained (>1 hour) loss of both offsite and onsite AC power sources as a result of a postulated Beyond Design Basis External Event (BDBEE) which is expected to exceed the 4 hour SBO coping period.

4.4 **STATION BLACKOUT (SBO)** «CM-1»

1. The Shift Manager shall conduct a continuous assessment of the prognosis for restoration of power to Div 1 and/or Div 2.

IF Within 1 HOUR of the Station Blackout, there has not been action taken that would provide a HIGH ASSURANCE of restoration of Div 1 and/or Div 2 power within the 4 hour SBO coping period,

THEN STOP executing Station Blackout actions and immediately execute CPS 4306.01 Extended Loss of AC Power/Loss of UHS.

- 3 At this point, executing CPS 4306.01 Extended Loss of AC Power/Loss of UHS takes precedence over attempts to restore offsite AC and/or DGs.

2. The Shift Manager shall continue to monitor SBO recovery actions.

IF While executing SBO actions, recovery actions prove to be unsuccessful

THEN STOP executing Station Blackout actions and immediately execute CPS 4306.01 Extended Loss of AC Power/Loss of UHS.

Assume 2 hours to perform the S92 procedure to restore an inoperable/unavailable D/G.
Assume all actions for the 4 hour coping strategy can/will be performed.

Answer all 3 questions

Initial Conditions:

Unit is in OPCON 4

Reactor Level is 85"

D-11 D/G is tagged oos for maintenance

At T=0 Undervoltage alarms are received on the 101 and 201 busses indicating a loss of off site power.

At T= 10 sec D-12 failure to start annunciator is received in the MCR. The PRO identifies that the D-12 D/G fails to start and dispatches an EO to the D/G.

At T=15 **minutes** the EO calls the MCR and states that he found both starting air receiver outlet valves CLOSED for the D-12 D/G

1. Do you declare an ELAP at t=1 hr?

NO

2. Assume same initial conditions, but EO makes the same report at T=55 min?

NO

3. Assume same initial conditions, but EO makes the same report at t=4 hours?

YES

When answering the following question assume a single unit BWR similar to LGS. The unit only has 2 divisions of Diesels.

Consider the following procedure guidance on when to enter an ELAP per E-1 (This is different than LGS)

IMMEDIATE OPERATOR ACTIONS

1. Within a maximum of 1 hour, the Shift Manager SHALL determine if an Extended Loss of AC Power (ELAP) exists.

Extended Loss of AC Power (ELAP)

1. A total and sustained (>1 hour) loss of both offsite and onsite AC power sources as a result of a postulated Beyond Design Basis External Event (BDBEE) which is expected to exceed the 4 hour SBO coping period.

4.4 STATION BLACKOUT (SBO) «CM-1»

1. The Shift Manager shall conduct a continuous assessment of the prognosis for restoration of power to Div 1 and/or Div 2.

IF Within 1 HOUR of the Station Blackout, there has not been action taken that would provide a HIGH ASSURANCE of restoration of Div 1 and/or Div 2 power within the 4 hour SBO coping period,

THEN STOP executing Station Blackout actions and immediately execute CPS 4306.01 Extended Loss of AC Power/Loss of UHS.

- ② At this point, executing CPS 4306.01 Extended Loss of AC Power/Loss of UHS takes precedence over attempts to restore offsite AC and/or DGs.

2. The Shift Manager shall continue to monitor SBO recovery actions.

IF While executing SBO actions, recovery actions prove to be unsuccessful

THEN STOP executing Station Blackout actions and immediately execute CPS 4306.01 Extended Loss of AC Power/Loss of UHS.

Assume 2 hours to perform the S92 procedure to restore an inoperable/unavailable D/G.
Assume all actions for the 4 hour coping strategy can/will be performed.

Answer all 3 questions

Initial Conditions:

Unit is in OPCON 4

Reactor Level is 85"

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At T=0 Undervoltage alarms are received on the 101 and 201 busses indicating a loss of off site power.

At T= 10 sec D-12 failure to start annunciator is received in the MCR. The PRO identifies that the D-12 D/G fails to start and dispatches an EO to the D/G.

At T=15 **minutes** the EO calls the MCR and states that he found both starting air receiver outlet valves CLOSED for the D-12 D/G

1. Do you declare an ELAP at t=1 hr?

No

2. Assume same initial conditions, but EO makes the same report at T=55 **min**?

No

3. Assume same initial conditions, but EO makes the same report at t=4 **hours**?

Yes

When answering the following question assume a single unit BWR similar to LGS. The unit only has 2 divisions of Diesels.

Consider the following procedure guidance on when to enter an ELAP per E-1 (This is different than LGS)

IMMEDIATE OPERATOR ACTIONS

1. Within a maximum of 1 hour, the Shift Manager SHALL determine if an Extended Loss of AC Power (ELAP) exists.

Extended Loss of AC Power (ELAP)

1. A total and sustained (>1 hour) loss of both offsite and onsite AC power sources as a result of a postulated Beyond Design Basis External Event (BDBEE) which is expected to exceed the 4 hour SBO coping period.

4.4 STATION BLACKOUT (SBO) «CM-1»

1. The Shift Manager shall conduct a continuous assessment of the prognosis for restoration of power to Div 1 and/or Div 2.

IF Within 1 HOUR of the Station Blackout, there has not been action taken that would provide a HIGH ASSURANCE of restoration of Div 1 and/or Div 2 power within the 4 hour SBO coping period,

THEN STOP executing Station Blackout actions and immediately execute CPS 4306.01 Extended Loss of AC Power/Loss of UHS.

- ☞ At this point, executing CPS 4306.01 Extended Loss of AC Power/Loss of UHS takes precedence over attempts to restore offsite AC and/or DGs.

2. The Shift Manager shall continue to monitor SBO recovery actions.

IF While executing SBO actions, recovery actions prove to be unsuccessful

THEN STOP executing Station Blackout actions and immediately execute CPS 4306.01 Extended Loss of AC Power/Loss of UHS.

Assume 2 hours to perform the S92 procedure to restore an inoperable/unavailable D/G.
Assume all actions for the 4 hour coping strategy can/will be performed.

Answer all 3 questions

Initial Conditions:

Unit is in OPCON 4

Reactor Level is 85"

D-11 D/G is tagged oos for maintenance

At T=0 Undervoltage alarms are received on the 101 and 201 busses indicating a loss of off site power.

At T= 10 sec D-12 failure to start annunciator is received in the MCR. The PRO identifies that the D-12 D/G fails to start and dispatches an EO to the D/G.

At T=15 **minutes** the EO calls the MCR and states that he found both starting air receiver outlet valves CLOSED for the D-12 D/G

1. Do you declare an ELAP at t=1 hr?

No, I would not expect the loss of power to exceed 4 hours. Based on the information provided, I would expect to have an EDG running and providing power at T=2.25 hours.

2. Assume same initial conditions, but EO makes the same report at T=55 **min**?

No, I would not declare ELAP. The procedure states "If within 1 hour there has not been action taken".
At T=55, I am within the hour and taking action to restore within 4 hours. I would expect power returned at T=2 hours 55 min.

3. Assume same initial conditions, but EO makes the same report at t=4 **hours**?

Yes, I would have already declared ELAP. Within the 1 hour of loss of AC, the Shift manager is continuously assessing for if we are going to get power back and if it will be back within 4 hours. Since I would have already passed the IF/THEN in the procedure, I would be in CPS4306.01 which takes precedence to restoring the EDG.

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Consider the following procedure guidance on when to enter an ELAP per E-1 (This is different than LGS)

IMMEDIATE OPERATOR ACTIONS

1. Within a maximum of 1 hour, the Shift Manager SHALL determine if an Extended Loss of AC Power (ELAP) exists.

Extended Loss of AC Power (ELAP)

1. A total and sustained (>1 hour) loss of both offsite and onsite AC power sources as a result of a postulated Beyond Design Basis External Event (BDBEE) which is expected to exceed the 4 hour SBO coping period.

4.4 STATION BLACKOUT (SBO) «CM-1»

1. The Shift Manager shall conduct a continuous assessment of the prognosis for restoration of power to Div 1 and/or Div 2.

IF Within 1 HOUR of the Station Blackout, there has not been action taken that would provide a HIGH ASSURANCE of restoration of Div 1 and/or Div 2 power within the 4 hour SBO coping period,

THEN STOP executing Station Blackout actions and immediately execute CPS 4306.01 Extended Loss of AC Power/Loss of UHS.

- ☞ At this point, executing CPS 4306.01 Extended Loss of AC Power/Loss of UHS takes precedence over attempts to restore offsite AC and/or DGs.

2. The Shift Manager shall continue to monitor SBO recovery actions.

IF While executing SBO actions, recovery actions prove to be unsuccessful

THEN STOP executing Station Blackout actions and immediately execute CPS 4306.01 Extended Loss of AC Power/Loss of UHS.

Assume 2 hours to perform the S92 procedure to restore an inoperable/unavailable D/G.
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Answer all 3 questions

Initial Conditions:

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At T= 10 sec D-12 failure to start annunciator is received in the MCR. The PRO identifies that the D-12 D/G fails to start and dispatches an EO to the D/G.

At T=15 minutes the EO calls the MCR and states that he found both starting air receiver outlet valves CLOSED for the D-12 D/G

1. Do you declare an ELAP at t=1 hr?

Per the procedure: **No**, restoration within the coping time can be assured. Actions were taken within one hour to restore division 2 diesel bus, expected at T= 2hr 15 min.

2. Assume same initial conditions, but EO makes the same report at T=55 min?

Per the procedure: **No**, restoration within the coping time can be assured. Actions were taken within one hour with high assurance that the division 2 diesel bus will be restored at T= 2hr 55 min.

3. Assume same initial conditions, but EO makes the same report at t=4 hours?

Actions per E-1 should have already been suspended at T= 1hr when the high assurance of restoration standard was missed. Operators already missed entry into ELAP and this should be performed as soon as they realize that the time limit was missed. At T=4 hours the coping time will be exceeded. Division 2 will not be available until T=6 hours.

Note: The definition of ELAP contradicts the actions expected of the operators in E-1. NRC order 12-049 requires operators to initiate FLEX actions (ELAP) if power if SBO conditions cannot be restored within one hour. With this definition, also assuming that S92 procedures take 2 hours to restore power, there is no condition that would allow use of E-1. At Limerick, it is assumed that actions can be taken to cross tie buses with the non-SBO unit to restore a single division within one hour.

When answering the following question assume a single unit BWR similar to LGS. The unit only has 2 divisions of Diesels.

Consider the following procedure guidance on when to enter an ELAP per E-1 (This is different than LGS)

IMMEDIATE OPERATOR ACTIONS

1. Within a maximum of 1 hour, the Shift Manager SHALL determine if an Extended Loss of AC Power (ELAP) exists.

Extended Loss of AC Power (ELAP)

1. A total and sustained (>1 hour) loss of both offsite and onsite AC power sources as a result of a postulated Beyond Design Basis External Event (BDBEE) which is expected to exceed the 4 hour SBO coping period.

4.4 STATION BLACKOUT (SBO) «CM-1»

1. The Shift Manager shall conduct a continuous assessment of the prognosis for restoration of power to Div 1 and/or Div 2.

IF Within 1 HOUR of the Station Blackout, there has not been action taken that would provide a HIGH ASSURANCE of restoration of Div 1 and/or Div 2 power within the 4 hour SBO coping period,

THEN STOP executing Station Blackout actions and immediately execute CPS 4306.01 Extended Loss of AC Power/Loss of UHS.

☞ **At this point, executing CPS 4306.01 Extended Loss of AC Power/Loss of UHS takes precedence over attempts to restore offsite AC and/or DGs.**

2. The Shift Manager shall continue to monitor SBO recovery actions.

IF While executing SBO actions, recovery actions prove to be unsuccessful

THEN STOP executing Station Blackout actions and immediately execute CPS 4306.01 Extended Loss of AC Power/Loss of UHS.

Assume 2 hours to perform the S92 procedure to restore an inoperable/unavailable D/G.
Assume all actions for the 4 hour coping strategy can/will be performed.

Answer all 3 questions

Initial Conditions:

Unit is in OPCON 4

Reactor Level is 85"

D-11 D/G is tagged oos for maintenance

At T=0 Undervoltage alarms are received on the 101 and 201 busses indicating a loss of off site power.

At T= 10 sec D-12 failure to start annunciator is received in the MCR. The PRO identifies that the D-12 D/G fails to start and dispatches an EO to the D/G.

At T=15 **minutes** the EO calls the MCR and states that he found both starting air receiver outlet valves CLOSED for the D-12 D/G

1. Do you declare an ELAP at t=1 hr?

This depends on the state of the starting air receiver pressure. If I can open the air valves and start D12 then I have a success path for restoring D12 and don't meet the ELAP definition with respect to "expected to exceed the 4 hour coping strategy".

IF starting air receiver pressure is too low to start D12 or the attempt to start D12 fails following realignment of the valves then I would declare ELAP.

2. Assume same initial conditions, but EO makes the same report at T=55 **min**?

Same answer as above. I would expect to be able to open the air valves and restore power prior to the end of the 4 hour coping period. If that attempt fails then ELAP would be declared.

3. Assume same initial conditions, but EO makes the same report at t=4 **hours**?

In this case at Time T= 1 hr I don't know of a success path that would restore my AC power. Therefore, I would prioritize and execute the ELAP actions at T= 1 hr in accordance with the direction of SBO.

When answering the following question assume a single unit BWR. The unit only has 2 divisions of Diesels.

Consider the following procedure guidance on when to enter an ELAP

IMMEDIATE OPERATOR ACTIONS

1. Within a maximum of 1 hour, the Shift Manager SHALL determine if an Extended Loss of AC Power (ELAP) exists.

Extended Loss of AC Power (ELAP)

1. A total and sustained (>1 hour) loss of both offsite and onsite AC power sources as a result of a postulated Beyond Design Basis External Event (BDBEE) which is expected to exceed the 4 hour SBO coping period.

4.4 **STATION BLACKOUT (SBO)** «CM-1»

1. The Shift Manager shall conduct a continuous assessment of the prognosis for restoration of power to Div 1 and/or Div 2.

IF Within 1 HOUR of the Station Blackout, there has not been action taken that would provide a HIGH ASSURANCE of restoration of Div 1 and/or Div 2 power within the 4 hour SBO coping period,

THEN STOP executing Station Blackout actions and immediately execute CPS 4306.01 Extended Loss of AC Power/Loss of UHS.

- ☞ At this point, executing CPS 4306.01 Extended Loss of AC Power/Loss of UHS takes precedence over attempts to restore offsite AC and/or DGs.

2. The Shift Manager shall continue to monitor SBO recovery actions.

IF While executing SBO actions, recovery actions prove to be unsuccessful

THEN STOP executing Station Blackout actions and immediately execute CPS 4306.01 Extended Loss of AC Power/Loss of UHS.

Assume 2 hours to perform the procedure to restore an inoperable/unavailable D/G.
Assume all actions for the 4 hour coping strategy can/will be performed.

Answer all 3 questions

Initial Conditions:

Unit is in OPCON 4

Div 1 D/G is tagged oos for maintenance

At T=0 Undervoltage alarms are received indicating a loss of off site power.

At T= 10 sec Division 2 D/G failure to start annunciator is received in the MCR. The RO identifies that the Div 2 D/G fails to start and dispatches an EO to the D/G.

At T=15 **minutes** the EO calls the MCR and states that he found both starting air receiver outlet valves CLOSED for the Div 2 D/G

1. Do you declare an ELAP at t=1 hr? NO

2. Assume same initial conditions, but EO makes the same report at T=55 **min**? YES (probably would have declared before assuming this to be a long time to get a report from the NPO)

3. Assume same initial conditions, but EO makes the same report at t=4 **hours**? YES

Condition:

- You are a shift manager at a Single Unit Boiling Water Reactor
- The Unit is in mode 4 (Cold Shutdown, RCS depressurized at 100 degF)
- All Division 1 safety equipment is out of service for a divisional bus outage.
- Division 2 systems are all OPERABLE. RHR-B is in shutdown cooling and one Low Pressure Injection pump is OPERABLE.
- The Division 2 diesel generator had no maintenance performed on it this outage. The Division 2 generator was partially tagged out as part of a clearance order zone of protection to support 4160V bus inspections early in the outage. That work was completed and the generator was restored to OPERABLE 7 days ago.
- The Division 3 Diesel Generator is OPERABLE, however the associated ECCS Pump (High Pressure Core Spray) is INOPERABLE. The only loads serviced by Division 3 at this time are a battery charger and inverter for RPS/Safeguard logic and indications.
- Time to boil is approximately 4 hours. Time to TAF is approximately 11 hours with no actions taken (with SDC manual isolations, time to TAF is 24 hours).

At time = 0, a loss of all offsite power occurs. The division 2 diesel generator fails to start resulting in a loss of all shutdown cooling and a station blackout.

This is a single unit plant, there is no other unit to cross tie power to.

The Division 2 DG panel has a "Failure To Start / Overcrank Trip" alarm and "Lockout Relay Trip" alarm. There is no visible damage to the division 2 DG.

At t = 45 minutes, the local operator identifies that the diesel generator air start system isolation valves are SHUT with black straps. These valves are normally locked open to allow the engine to start.

The local operator has commenced action to utilize the Diesel Generator lineup procedure to align the air start system and make the diesel generator ready for operation. The local operator estimates the diesel generator will be ready to start by t = 1.5 hours into the event.

The "Loss of AC Power" procedure directs the shift manager as follows:

IMMEDIATE OPERATOR ACTIONS

1. Within a maximum of 1 hour, the Shift Manager SHALL determine if an Extended Loss of AC Power (ELAP) exists.

Extended Loss of AC Power (ELAP)

1. A total and sustained (>1 hour) loss of both offsite and onsite AC power sources as a result of a postulated Beyond Design Basis External Event (BDBEE) which is expected to exceed the 4 hour SBO coping period.

1. **IF** An ELAP exists (see step 1.5 for Definition)

THEN STOP executing Station Blackout actions

AND

Immediately execute CPS 4306.01 Extended Loss of AC Power/Loss of UHS.

4.4 STATION BLACKOUT (SBO) «CM-1»

1. The Shift Manager shall conduct a continuous assessment of the prognosis for restoration of power to Div 1 and/or Div 2.

IF Within 1 HOUR of the Station Blackout, there has not been action taken that would provide a HIGH ASSURANCE of restoration of Div 1 and/or Div 2 power within the 4 hour SBO coping period,

THEN STOP executing Station Blackout actions and immediately execute CPS 4306.01 Extended Loss of AC Power/Loss of UHS.

☞ At this point, executing CPS 4306.01 Extended Loss of AC Power/Loss of UHS takes precedence over attempts to restore offsite AC and/or DGs.

2. The Shift Manager shall continue to monitor SBO recovery actions.

IF While executing SBO actions, recovery actions prove to be unsuccessful

THEN STOP executing Station Blackout actions and immediately execute CPS 4306.01 Extended Loss of AC Power/Loss of UHS.

Alarm cards are as follows:

FAILURE TO START

TITLE: FAILURE TO START			5285-3D
DEVICE	NAME	SETPOINT	<u>INDICATION</u>
K4	Overcrank Relay	< 125 rpm and > 10 sec after start	LOCKOUT RELAY TRIPPED amber light ON

POSSIBLE CAUSE

1. Low starting air pressure
2. Lockout relay not reset
3. Overspeed trip handle not reset
4. Safety shutdown circuits not reset
5. Engine maintenance switch in LOCKOUT position

AUTO ACTIONS

Lockout relay trips.

OPERATOR ACTIONS

1. Verify DG 1B is ready to start per
CPS 3506.01, Diesel Generator And Support Systems (DG).
2. If the 4160V Bus 1B1 is deenergized after DG 1B failure to start,
refer to CPS 3501.01, High Voltage Auxiliary Power System to
reenergize the bus.
3. If required, proceed to CPS 4200.01, Loss Of AC Power.

LOCKOUT RELAY
TRIPPED

TITLE: LOCKOUT RELAY TRIPPED			5285-3E
DEVICE	NAME	SETPOINT	<u>INDICATION</u>
86	LOCKOUT RELAY	TRIPPED	LOCKOUT RELAY TRIPPED amber light ON

POSSIBLE CAUSE

NOTE

*LOCA signal bypasses all protective trips except:
Overspeed/Emergency Stop/High Generator Δ Current*

DG 1B 86 lock out relay will trip on the following parameters:

- | | |
|---------------------------------------|------------------------------------|
| a) Overspeed (1035 rpm) | f) Generator Ground Fault |
| b) Emergency Stop (local/remote) | g) Reverse Power |
| c) Low Oil Pressure (19 psig) | h) High Generator Δ Current |
| d) High Coolant Temperature (205°F) | i) Loss of Excitation |
| e) Overcrank (< 125 rpm for > 10 sec) | j) Overcurrent |

AUTO ACTIONS

1. Trips the generator to field circuit breaker (41 device)
2. Trips DG 1B.

OPERATOR ACTIONS

1. If the 4160V 1B1 Bus remains deenergized after the DG has tripped, refer to CPS 3501.01, High Voltage Auxiliary Power System for reenergizing the bus.
2. At direction from SMngt, reset 86/41 lockout relays per CPS 3506.01, Diesel Generator And Support Systems (DG).
3. If required, proceed to CPS 4200.01, Loss Of AC Power.

- 1) It is now 1 hour into the event. As the shift manager, evaluate the above procedure steps from "Loss of AC Power Off-Normal" and determine if this event requires entry the FLEX/ELAP procedure. Explain why.

No. There is high likelihood that power will be restored within the 4 hour coping time as reported by the field operator at the Div 2 EDG.

- 2) Alternate Scenario: At time = 50 minutes, the field operator cannot identify why the division 2 DG did not start. The transmission operator calls the station and states that offsite power to the station can be restored by time = 3 hours.
As the shift manager, As the shift manager, evaluate the above procedure steps from "Loss of AC Power Off-Normal" and determine if this event requires entry the FLEX/ELAP procedure. Explain why.

Not yet. Per your SBO procedure, action has been taken within 1 hour (by the system operator) that provides high assurance that power will be restored within the coping period. However, also per your SBO procedure step 4.4.2, the SM can re-direct to ELAP actions at any time he determines the high assurance no longer exists. Your Loss of AC power procedure and your SBO procedure seem to have a disconnect associated with this step. Your Loss of AC power simply says stop what you are doing and only do ELAP actions. But your SBO procedure says to continue SBO actions (at a lower priority) until it is determined they will not be successful in restoring power within the coping period.

- 3) Alternate Scenario: At time = 45 minutes, the division 2 DG was returned to standby, however when attempting to start the engine a piston rod cracked through the casing causing substantial damage to the engine. The division 2 DG was emergency stopped by isolating fuel oil from the day tank.
At time = 50 minutes , the TSC manager notifies the control room that they have been briefing a station procedure to cross tie the division 3 diesel generator to division 2 bus as a contingency. The division 3 diesel generator is capable of supplying either 1 RHR pump or 1 low pressure injection pump. They estimate that they could complete the cross tie procedure at approximately $t = 3$ hours.

As the shift manager, evaluate the above procedure steps from "Loss of AC Power Off-Normal" and determine if this event requires entry the FLEX/ELAP procedure. Explain why.

Not yet. The reason is the same as the previous event: action has been taken that provides high assurance that power can be restored through the implementation of a station procedure. This case for staying in SBO is arguably stronger than the previous case. Continued monitoring of the power restoration per step 4.4.2 of the SBO procedure is required. Once the high assurance is lost, a strategy shift to ELAP actions is required.

Some comments not associated with the scenarios:

- The decision on transition from SBO to ELAP has to take into account what the next actions are. In SBO, the next actions are likely associated with preparing for restoration of offsite power. At HC, this requires a switching evolution of about 2 hours for two NLOs and a Field Supv. In ELAP, the next actions may require these 2 NLOs to do something associated with preparing for FLEX power. At HC, the ELAP load shed prohibits us from being able to restore offsite power from the control room (no controls or indications for the switchyard) and takes away all ability to start any EDG. Also, the validated time to energize the required equipment from the FLEX diesel is nearly 3 hours, with a required time to initiate injection using the FLEX pump of $t=5$ hours from event start.
- Your validation times for ELAP are likely based on the loss of power causing a scram, not a start from OPCON 4. Your SBO coping period is the time to cool down to be able to transfer to shutdown cooling when power is restored.

When answering the following question assume a single unit BWR. The unit only has 2 divisions of Diesels.

Consider the following procedure guidance on when to enter an ELAP

IMMEDIATE OPERATOR ACTIONS

1. Within a maximum of 1 hour, the Shift Manager SHALL determine if an Extended Loss of AC Power (ELAP) exists.

Extended Loss of AC Power (ELAP)

1. A total and sustained (>1 hour) loss of both offsite and onsite AC power sources as a result of a postulated Beyond Design Basis External Event (BDBEE) which is expected to exceed the 4 hour SBO coping period.

4.4 STATION BLACKOUT (SBO) «CM-1»

1. The Shift Manager shall conduct a continuous assessment of the prognosis for restoration of power to Div 1 and/or Div 2.

IF Within 1 HOUR of the Station Blackout, there has not been action taken that would provide a HIGH ASSURANCE of restoration of Div 1 and/or Div 2 power within the 4 hour SBO coping period,

THEN STOP executing Station Blackout actions and immediately execute CPS 4306.01 Extended Loss of AC Power/Loss of UHS.

- ③ At this point, executing CPS 4306.01 Extended Loss of AC Power/Loss of UHS takes precedence over attempts to restore offsite AC and/or DGs.

2. The Shift Manager shall continue to monitor SBO recovery actions.

IF While executing SBO actions, recovery actions prove to be unsuccessful

THEN STOP executing Station Blackout actions and immediately execute CPS 4306.01 Extended Loss of AC Power/Loss of UHS.

Assume 2 hours to perform the procedure to restore an inoperable/unavailable D/G.
Assume all actions for the 4 hour coping strategy can/will be performed.

Answer all 3 questions

Initial Conditions:

Unit is in OPCON 4

Div 1 D/G is tagged oos for maintenance

At T=0 Undervoltage alarms are received indicating a loss of off-site power.

At T= 10 sec Division 2 D/G failure to start annunciator is received in the MCR. The RO identifies that the Div 2 D/G fails to start and dispatches an EO to the D/G.

At T=15 **minutes** the EO calls the MCR and states that he found both starting air receiver outlet valves CLOSED for the Div 2 D/G

1. Do you declare an ELAP at t=1 hr?

No: Assuming that actions can be started within the one hour window to begin restoration of the D2 D-G, there is reasonable assurance that the diesel will be restored to Operability in 2 hours which is within the four-hour coping time window.

2. Assume same initial conditions, but EO makes the same report at T=55 min?

A qualified 'NO': It depends how 'action taken' to restore D2 power is defined. With a report that the diesel is isolated from its starting air supply at t=55, you have 5 minutes to commence actions that will restore the diesel to operability and still meet the 'actions in progress' statement above. It is identified in the question stem that restoration takes 2 hours, so there is a high assurance that the blackout can be terminated within the 4-hour coping time window. In terms of IER 17-5 and 'line of site to the core', pursuing restoration of the D2 diesel feels like the better choice for the plant.

3. Assume same initial conditions, but EO makes the same report at t=4 hours?

Yes: An ELAP should have already been declared at the 1-hour mark when there were no action in progress that would provide a high assurance of restoring a diesel or off-site source. While this might still be a case where the quickest path to an energized bus is via the D2 D-G, but your procedure leaves no other option.

From: [REDACTED]
Sent: Monday, November 12, 2018 10:36 AM
To: [REDACTED]
Subject: RE: CPS ELAP.docx

1. Do you declare an ELAP at t=1 hr?

NO

2. Assume same initial conditions, but EO makes the same report at T=55 min?

NO

3. Assume same initial conditions, but EO makes the same report at t=4 hours?

YES

From: [REDACTED]
Sent: Thursday, November 08, 2018 8:29 AM
To: [REDACTED]

Subject: CPS ELAP.docx

Can you take this quiz for me.

Also, can you have all of your SROs take the quiz ASAP.

They can send me their responses via email directly.

This supports an argument for our reg conference.

The quiz is just yes/no

From: [REDACTED]
Sent: Tuesday, November 13, 2018 2:55:29 PM
To: [REDACTED]
Cc: [REDACTED]
Subject: [EXTERNAL] ELAP Quiz

[REDACTED]

In answer to your questions:

1. No ELAP
2. No ELAP – assumes you will be able to restore at least one diesel long before the 4 hour coping time
3. ELAP – The decision needs to be made at or before 1 hour into the event. Information is not received about restoration capability until long after the one hour time limit

Hope this helps.....(And I hope I'm correct!)

[REDACTED]
Senior Reactor Operator

[REDACTED]

From: [REDACTED]
Sent: Tuesday, November 13, 2018 2:05:26 PM
To: [REDACTED]
Subject: RE: ELAP.docx

[REDACTED]
I have sent the request to all my SRO's and will discuss on our SM phone call tonight.

Also, my answers

1. NO
2. NO
3. YES

[REDACTED]
From: [REDACTED]
Sent: Tuesday, November 13, 2018 11:28 AM
To: [REDACTED]
Subject: ELAP.docx

[REDACTED] - Please have your folks take this quiz. As many as possible would be appreciated.

I only need yes/no answers.

They can reply back to me at [REDACTED] with their answers

Thanks for your help.

From: [REDACTED]
Sent: Thursday, October 25, 2018 7:17 AM
To: [REDACTED]
Cc: [REDACTED]
Subject: ELAP.docx

[REDACTED]

Here is my perspective on the ELAP questions:

Answer all 3 questions

Initial Conditions:
Unit is in OPCON 4
Reactor Level is 85"
D-11 D/G is tagged oos for maintenance

At T=0 Undervoltage alarms are received on the 101 and 201 busses indicating a loss of off site power.
At T= 10 sec D-12 failure to start annunciator is received in the MCR. The PRO identifies that the D-12 D/G fails to start and dispatches an EO to the D/G.
At T=15 **minutes** the EO calls the MCR and states that he found both starting air receiver outlet valves CLOSED for the D-12 D/G

1. Do you declare an ELAP at t=1 hr?

NO. With assumptions that the time requirement to restore the INOP/Unavailable to power a bus per the S92 procedure is 2 hours and that all actions for the 4 hour coping strategy can/will be performed then there is a high assurance that power will be restored within the 4 hour SBO coping period. You do not have an ELAP until the loss of power would extend beyond the SBO coping period.

In this case, the expected time of restoration would be approximately 2hr- 15 min which is well within the 4 hour coping period.

2. Assume same initial conditions, but EO makes the same report at T=55 min?

NO. The same rational as question 1. The expected restoration time is now approximately 3hr – 10min and that still allows adequate margin to restore power before the 4 hour SBO coping period would expire.

3. Assume same initial conditions, but EO makes the same report at t=4 hours?

YES. With these conditions, no restoration of power and a projected 2 hour time to perform the S92 procedure to bring a EDG back on line to power a bus the 4 hour SBO coping period is exceeded and there is no choice but to declare an ELAP.

If you have any questions on my response or want to talk further, please don't hesitate to contact me (cell or text [REDACTED]) or reply to this E-mail...

Hope this helps,
[REDACTED]

From: [REDACTED]

Sent: Tuesday, November 13, 2018 2:17:09 PM

To: [REDACTED]

Cc: [REDACTED]

Subject: [EXTERNAL] ELAP response

Based on the initial conditions and the different times of discovery I would answer:

1. No. I would restore starting air, start and load Div II busses and provide decay heat removal from Div II
2. No. I would not declare ELAP as I would expect D/G recovery to occur prior to expiration of 4 hour coping time
3. Yes. At this point ELAP should already have been declared and there is no chance of recovering D/G within 4 hour recovery time.

[REDACTED]
Unit Supervisor [REDACTED]

From: [REDACTED]
Sent: Thursday, October 25, 2018 7:11 AM
To: [REDACTED]
Subject: FW: ELAP.docx

[REDACTED]

Hope all is well,

60 min: No
55 min: No
4 hour: Yes

I am assuming the discovery of the D12 Air receiver valves closed as an "action taken" and that I then have high assurance I can restore D12 within the following 2 hours.

[REDACTED]

From: [REDACTED]
Sent: Thursday, October 25, 2018 7:49 AM
To: [REDACTED]
[REDACTED]
[REDACTED]
Subject: Fwd: ELAP.docx

Guys please read this and respond to [REDACTED]

Get [Outlook for iOS](#)

From: [REDACTED]
Sent: Wednesday, October 24, 2018 21:16
To: [REDACTED]
Subject: ELAP.docx

Here is the ELAP "quiz". This is to support an "external perspective" on entering ELAP to support Clinton going to a regulatory conference due to a white finding.

Could you please have SROs send their responses directly to me.

Thanks.

From: [REDACTED]
Sent: Thursday, October 25, 2018 6:59 AM
To: [REDACTED]
Subject: FW: ELAP.docx

Good morning [REDACTED]

[REDACTED] forwarded your questionnaire and asked us to email you directly.

Question 1) No
Question 2) No
Question 3) Yes

Let me know if you need anything else.

Best,

[REDACTED]

From: [REDACTED]
Sent: Thursday, October 25, 2018 7:49 AM
To: [REDACTED]
Subject: Fwd: ELAP.docx

Guys please read this and respond to [REDACTED]

Get [Outlook for iOS](#)

From: [REDACTED]
Sent: Wednesday, October 24, 2018 21:16
To: [REDACTED]
Subject: ELAP.docx

Here is the ELAP "quiz". This is to support an "external perspective" on entering ELAP to support Clinton going to a regulatory conference due to a white finding.

Could you please have SROs send their responses directly to me.

Thanks.

From: [REDACTED]
Sent: Thursday, October 25, 2018 6:49 AM
To: [REDACTED]
Subject: FW: ELAP.docx

Answers in Red

Assume 2 hours to perform the S92 procedure to restore an inoperable/unavailable D/G.
Assume all actions for the 4 hour coping strategy can/will be performed.

Answer all 3 questions

Initial Conditions:
Unit is in OPCON 4
Reactor Level is 85"
D-11 D/G is tagged oos for maintenance

At T=0 Undervoltage alarms are received on the 101 and 201 busses indicating a loss of off site power.
At T= 10 sec D-12 failure to start annunciator is received in the MCR. The PRO identifies that the D-12 D/G fails to start and dispatches an EO to the D/G.
At T=15 **minutes** the EO calls the MCR and states that he found both starting air receiver outlet valves CLOSED for the D-12 D/G

1. Do you declare an ELAP at t=1 hr? NO
2. Assume same initial conditions, but EO makes the same report at T=55 **min**? NO
3. Assume same initial conditions, but EO makes the same report at t=4 **hours**? YES

From: [REDACTED]
Sent: Wednesday, October 24, 2018 9:29 PM
To: [REDACTED]
Subject: FW: ELAP.docx

[REDACTED] have your SRO's take this 3 question quiz for Clinton station and have them send it to [REDACTED]
Directly the sooner the better should only take 5 minutes

From: [REDACTED]
Sent: Wednesday, October 24, 2018 9:16 PM
To: [REDACTED]
Subject: ELAP.docx

Here is the ELAP "quiz". This is to support an "external perspective" on entering ELAP to support Clinton going to a regulatory conference due to a white finding.

Could you please have SROs send their responses directly to me.

Thanks.

From: [REDACTED]
Sent: Thursday, November 8, 2018 7:46 AM
To: [REDACTED]
Subject: RE: CPS ELAP.docx

1. No
2. No
3. Yes

From: [REDACTED]
Sent: Thursday, November 08, 2018 8:29 AM
To: [REDACTED]

Subject: CPS ELAP.docx

Can you take this quiz for me.

Also, can you have all of your SROs take the quiz ASAP.

They can send me their responses via email directly.

This supports an argument for our reg conference.

The quiz is just yes/no

From: [REDACTED]
Sent: Thursday, October 25, 2018 7:10 AM
To: [REDACTED]
Subject: FW: ELAP.docx

1. No
2. No
3. Yes if the ELAP hasn't already been declared earlier.

From: [REDACTED]
Sent: Thursday, October 25, 2018 7:49 AM
To: [REDACTED]
[REDACTED]
[REDACTED]
Subject: Fwd: ELAP.docx

Guys please read this and respond to [REDACTED]

Get [Outlook for iOS](#)

From: [REDACTED]
Sent: Wednesday, October 24, 2018 21:16
To: [REDACTED]
Subject: ELAP.docx

Here is the ELAP "quiz". This is to support an "external perspective" on entering ELAP to support Clinton going to a regulatory conference due to a white finding.

Could you please have SROs send their responses directly to me.

Thanks.

From: [REDACTED]
Sent: Thursday, November 8, 2018 1:07 PM
To: [REDACTED]
Cc: [REDACTED]
Subject: RE: CPS ELAP.docx

Hi [REDACTED]

I hope you are doing well and enjoying the Mid-West.

[REDACTED]

1. No
2. No
3. Yes

From: [REDACTED]
Sent: Thursday, November 08, 2018 8:29 AM
To: [REDACTED]
[REDACTED]
[REDACTED]
Subject: CPS ELAP.docx

Can you take this quiz for me.

Also, can you have all of your SROs take the quiz ASAP.

They can send me their responses via email directly.

This supports an argument for our reg conference.

The quiz is just yes/no

From: [REDACTED]
Sent: Thursday, October 25, 2018 8:55 AM
To: [REDACTED]
Cc: [REDACTED]
Subject: ELAP questions

[REDACTED]

Answers provided below.

Assume 2 hours to perform the S92 procedure to restore an inoperable/unavailable D/G.
Assume all actions for the 4 hour coping strategy can/will be performed.

Answer all 3 questions

Initial Conditions:
Unit is in OPCON 4
Reactor Level is 85"
D-11 D/G is tagged oos for maintenance

At T=0 Undervoltage alarms are received on the 101 and 201 busses indicating a loss of off site power.
At T= 10 sec D-12 failure to start annunciator is received in the MCR. The PRO identifies that the D-12 D/G fails to start and dispatches an EO to the D/G.
At T=15 **minutes** the EO calls the MCR and states that he found both starting air receiver outlet valves CLOSED for the D-12 D/G

1. Do you declare an ELAP at t=1 hr?

No, provided the CRS has directed performance of the S92 procedure and there were no other previously identified issues with the diesel, there is HIGH ASSURANCE of restoration of the Div 2 power within the 4 hr SBO coping period.

2Hr plus 15 minutes is less than 4 hours.

2. Assume same initial conditions, but EO makes the same report at T=55 **min**?

No, same rationale provided the S92 procedure has been directed to be performed prior to passing 1 Hr.
55 min + 2 Hrs is less than 4 hours.

3. Assume same initial conditions, but EO makes the same report at t=4 **hours**?

Yes, because now you will exceed the 4 hr coping period.

[REDACTED]

From: [REDACTED]
Sent: Thursday, October 25, 2018 8:05 AM
To: [REDACTED]
Cc: [REDACTED]
Subject: RE: ELAP.docx

[REDACTED]

Answers provided below. Let me know if you need any further clarification.

[REDACTED]

Answer all 3 questions

Initial Conditions:
Unit is in OPCON 4
Reactor Level is 85"
D-11 D/G is tagged oos for maintenance

At T=0 Undervoltage alarms are received on the 101 and 201 busses indicating a loss of off site power.
At T= 10 sec D-12 failure to start annunciator is received in the MCR. The PRO identifies that the D-12 D/G fails to start and dispatches an EO to the D/G.
At T=15 **minutes** the EO calls the MCR and states that he found both starting air receiver outlet valves CLOSED for the D-12 D/G

1. Do you declare an ELAP at t=1 hr?

This would depend on what I found **between minute 15 and minute 60**.

As written, I have to make an assumption about whether or not D12 restoration was successful in that 45 minutes before I declare at T= 1hr.

If restoring the 2 starting air valves was successful in restoring the EDG, then **NO***

If the 2 valves were restored to their required position and the EDG still will not start then **YES**

*Given the 4-hour coping period, I would not expect valve restoration to extend beyond that time period. I would not enter ELAP until I had made an UNSUCCESSFUL attempt to start the EDG with the valves restored.

2. Assume same initial conditions, but EO makes the same report at T=55 **min**?

NO*

*Given the 4-hour coping period, I would not expect valve restoration to extend beyond that time period. I would not enter ELAP until I had made an UNSUCCESSFUL attempt to start the EDG with the valves restored.

3. Assume same initial conditions, but EO makes the same report at t=4 hours?

YES, we have exceeded the 4 hour coping period and we have a projected 2hr time period for performing S92 to restore D-12.

From: [REDACTED]
Sent: Thursday, October 25, 2018 7:46 AM
To: [REDACTED]
Subject: FW: ELAP.docx

Guys, please answer these questions this morning and email it to [REDACTED]

From: [REDACTED]
Sent: Wednesday, October 24, 2018 9:29 PM
To: [REDACTED]
Subject: FW: ELAP.docx

[REDACTED] have your SRO's take this 3 question quiz for Clinton station and have them send it to [REDACTED] Directly the sooner the better should only take 5 minutes

From: [REDACTED]
Sent: Wednesday, October 24, 2018 9:16 PM
To: [REDACTED]
Subject: ELAP.docx

Here is the ELAP "quiz". This is to support an "external perspective" on entering ELAP to support Clinton going to a regulatory conference due to a white finding.

Could you please have SROs send their responses directly to me.

Thanks.

From: [REDACTED]
Sent: Wednesday, November 14, 2018 1:15 PM
To: [REDACTED]
Cc: [REDACTED]
Subject: RE: Odd request (non BWROG) (answer survey question)

[REDACTED]

I read through your scenarios and also [REDACTED] responses to which I would agree with each of them. I don't see any reason based on the scenarios to enter ELAP although you would need to continue to evaluate based on how the power restoration in each case is going. With each expected to be under 4 hours, no reason to go to ELAP initially IMO.

[REDACTED]

From: [REDACTED]
Sent: Wednesday, November 14, 2018 9:21 AM
To: [REDACTED]
Cc: [REDACTED]
Subject: RE: Odd request (non BWROG) (answer survey question)

[REDACTED]

See the attached for my response and other comments.

[REDACTED]

From: [REDACTED]
Sent: Tuesday, November 13, 2018 7:46 PM
To: [REDACTED]
Cc: [REDACTED]
Subject: [EXTERNAL] Odd request (non BWROG) (answer survey question)

Email sent from outside of [REDACTED]. Use caution before using links/attachments.
Hi everyone,

The reason I'm not at the committee meeting is I'm the ops lead for our reg conference/appeal on the significance of our diesel generator violation from our last outage (both DGs inop at the same time).

One of the things we are trying to prove to the NRC is that our procedure for when we are in an ELAP (Extended Loss of AC Power) is clear enough as to when we are in an ELAP vs Station Blackout, and when we would start the ELAP procedure to pursue FLEX activities.

If possible, sometime before lunch on Wednesday (tomorrow), could you answer the survey questions attached to my email?

This is being driven by some higher-ups in Exelon, to get some perspective on how our procedure reads for FLEX/ELAP/SBO. The NRC has a way they are interpreting our procedure that is resulting in some PRA results that we argue is not how the procedure actually reads.

If there is any time, please ask other RO/SRO/license level knowledgeable people to look and send results back.

Thank you so much and I really appreciate it!

██████