

**From:** [Riemer, Kenneth](#)  
**To:** [ALL\\_R3](#)  
**Subject:** RE: Daily 8:15 meeting notes for Wednesday 6/20 CORRECTION TO THE CORRECTION  
**Date:** Wednesday, June 20, 2018 12:20:33 PM

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Hopefully the third time is the charm! There will be cake tomorrow (and it has nothing to do with John Jandovitz); we will have cake to celebrate and to wish Kenji and Koji farewell.

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**From:** Riemer, Kenneth  
**Sent:** Wednesday, June 20, 2018 10:40 AM  
**To:** ALL\_R3 <[ALL\\_R3@nrc.gov](mailto:ALL_R3@nrc.gov)>  
**Subject:** RE: Daily 8:15 meeting notes for Wednesday 6/20

Correction – we'll be celebrating John Jandovitz' retirement with cake next week, not tomorrow. Sorry for implying we're so eager to see him leave that we'll celebrate his retirement without his presence here in the RIII; future congrats to John!!!

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**From:** Riemer, Kenneth  
**Sent:** Wednesday, June 20, 2018 10:00 AM  
**To:** ALL\_R3 <[ALL\\_R3@nrc.gov](mailto:ALL_R3@nrc.gov)>  
**Subject:** Daily 8:15 meeting notes for Wednesday 6/20

The Daily Morning Meeting News for Wednesday, June 20, 2018

Regional Duty Officer: K. Riemer  
Teleconference Number: (800) 779-9565; Passcode:   (b)(6)

Note: This newsletter may contain pre-decisional info. Do not distribute outside the NRC.

Behaviors of High Trust Leaders: Confront Reality  
Take issues head on, even the "undiscussables." Acknowledge the unsaid. Address the tough stuff directly. Confront issues before they turn into major problems. Lead out courageously in conversation. Confront the reality, not the person. Don't skirt the real issues. Don't bury your head in the sand.

Support Issues:

RA: None  
DRP: Farewell cake tomorrow at 10:00 for John Jandovitz for his retirement!  
DRS: 1) 10:00 am KM session by John Bozga on Risk Informed Thinking, session available via SKYPE or dial-in;  
2) ANS test call last night – follow-up on those who didn't receive the call  
DNMS: 1) Met with state of Indiana on what it takes to become an agreement state  
2) Erin Kennedy passed her qual board and is now a qualified licensee reviewer –  
Congrats to Erin!  
DRMA: None  
EICS: 1) No enforcement panels or SERPS tomorrow  
2) New guidance for SL IV violations with no performance deficiency. The new guidance (for efficiency purposes) will no longer give discretion; NRC will write up the SL IV violation. The change has been discussed with industry (See attached Office of

Enforcement Memo)

PAO: 1) coverage of discussion on First Energy decommissioning funds; 2) localized coverage of Byron property taxes; 3) NEI grid study

Materials Events/Issues:

None

Reactor Events

None

Part 21:

None

Plant Status

BRANCH 1

Clinton: SIT press release to be issued later this week

(b)(5)

Duane Arnold:

(b)(5)

Quad Cities: Both units in a 7 day LCO due to trip of Unit 2 EDG

U1:

(b)(5)

U2:

(b)(5)

BRANCH 2

Monticello:

Prairie Island:

U1:

U2:

DC Cook:

U1:

U2:

BRANCH 3

(b)(5)

Braidwood:

(b)(5)

U1:

U2:

(b)(5)

Byron:

(b)(5)

U1:

U2:

Palisades:

BRANCH 4

Davis-Besse:

Dresden:



(b)(5)

U2:

[Redacted]

(b)(5)

U3:

Point Beach:

U1:

U2:

BRANCH 5 (b)(5), (b)(7)(F)

LaSalle:

[Redacted] (b)(5), (b)(7)(F)

U1:

U2:

Perry:

Fermi 2:

NRR:

Additional Support Issues –

Other Issues –

Personnel News –

Daily Notes/Preliminary Notification –

One Week Look Ahead –

Post 8:15 Meeting Topics –

**From:** [Rierner, Kenneth](#)  
**To:** [Hanna, John](#)  
**Cc:** [Duncan, Eric](#); [Carrington, Kenya](#); [Murray, Robert](#)  
**Subject:** RE: Daily 8:15 meeting notes for Wednesday 6/20  
**Date:** Thursday, June 21, 2018 8:39:52 AM

(b)(5)

Ken

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**From:** Hanna, John  
**Sent:** Thursday, June 21, 2018 6:49 AM  
**To:** Rierner, Kenneth <Kenneth.Rierner@nrc.gov>  
**Subject:** RE: Daily 8:15 meeting notes for Wednesday 6/20

Ken,

I know that Nick Valos has "the ball" on this one, but I am curious... when does the 7 day clock expire?

By the way if for some reason Nick can't cover it, please let me know. ([REDACTED] cell) (b)(6)

Thanks.

John

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**From:** Rierner, Kenneth  
**Sent:** Wednesday, June 20, 2018 11:00 AM  
**To:** ALL\_R3 <[ALL\\_R3@nrc.gov](mailto:ALL_R3@nrc.gov)>  
**Subject:** Daily 8:15 meeting notes for Wednesday 6/20

The Daily Morning Meeting News for Wednesday, June 20, 2018

Regional Duty Officer: K. Rierner  
Teleconference Number: (800) 779-9565; Passcode: [REDACTED] (b)(6)

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DRP: Farewell cake tomorrow at 10:00 for John Jandovitz for his retirement!  
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Congrats to Erin!  
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EICS: 1) No enforcement panels or SERPS tomorrow  
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PAO: 1) coverage of discussion on First Energy decommissioning funds; 2) localized coverage of Byron property taxes; 3) NEI grid study

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Part 21:

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BRANCH 1

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U1:

(b)(5)

U2:

(b)(5)

BRANCH 2

Monticello:

Prairie Island:

U1:

U2:

DC Cook:

U1:

U2:

BRANCH 3

(b)(5)

Braidwood:

(b)(5)

(b)(5)

U1:

U2:

(b)(5) Byron:

(b)(5)

U1:

U2:

Palisades:

BRANCH 4

Davis-Besse:

Dresden:

(b)(5) U2:

(b)(5)

U3:

Point Beach:

U1:

U2:

BRANCH 5 (b)(5), (b)(7)(F)

LaSalle:

(b)(5), (b)(7)(F)

U1:

U2:

Perry:

Fermi 2:

NRR:

Additional Support Issues –

Other Issues –

Personnel News –

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One Week Look Ahead –

Post 8:15 Meeting Topics –



**From:** [Kozak, Laura](#)  
**To:** [Riemer, Kenneth](#); [Lara, Julio](#); [Stoedter, Karla](#); [Louden, Patrick](#)  
**Cc:** [Hanna, John](#)  
**Subject:** FW: Clinton SIT Status  
**Date:** Friday, June 29, 2018 12:27:56 PM

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FYI – a good summary from Jeff on our initial thoughts on the SDP evaluation for the Clinton finding.

We will need to prepare for an IFRB and a planning SERP (since HQ takes the lead on shutdown issues). I highlighted several important statements below.

I have typically estimated 4 to 6 weeks for a DRE, this one may be more like 6 to 8 weeks.

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**From:** Mitman, Jeffrey  
**Sent:** Thursday, June 28, 2018 7:28 PM  
**To:** Fong, CJ <CJ.Fong@nrc.gov>  
**Cc:** Circle, Jeff <Jeff.Circle@nrc.gov>; Kozak, Laura <Laura.Kozak@nrc.gov>  
**Subject:** Clinton SIT Status

(b)(5)

(b)(5)

As a reminder I'm on (b)(6) However, If you need to talk, we can make arrangements.

Jeff Mitman

**From:** [Murray, Robert](#)  
**To:** [Phillips, Charles](#)  
**Subject:** charter items  
**Date:** Thursday, June 28, 2018 2:56:02 PM

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5. Understand whether there were any deficiencies in operator training (both licensed and nonlicensed operators) which contributed to the EDG unavailability and the failure to identify the condition across multiple operating shifts. **Murray**

(b)(5)



7. Evaluate licensee planned and completed corrective actions following the EDG event to the extent possible and assess if prior opportunities (e.g., surveillances, maintenance, and self or nuclear oversight assessments) existed to have identified the problem at an earlier point in time. **Murray**

Corrective actions:

(b)(5)



**From:** [Murray, Robert](#)  
**To:** [Phillips, Charles](#)  
**Subject:** operability comments  
**Date:** Thursday, June 28, 2018 2:56:49 PM

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Non Responsive

Non Responsive

IMC 0326

03.07 Operability Declaration: An operability declaration is a decision by a senior licensed operator on the operating shift crew that there is a reasonable expectation that an SSC can perform its specified safety function.

**From:** [Murray, Robert](#)  
**To:** [Phillips, Charles](#)  
**Subject:** round point table  
**Date:** Friday, June 29, 2018 11:10:38 AM  
**Attachments:** [Rounds Points Crit V.docx](#)

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boom

(b)(5)

(b)(5)



**From:** [McCraw, Aaron](#)  
**To:** [ALL\\_R3](#)  
**Subject:** The Daily Morning Meeting News for Friday, June 29, 2018  
**Date:** Friday, June 29, 2018 10:05:23 AM  
**Attachments:** [Daily Morning Meeting News 06-29-2018.docx](#)

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**The Daily Morning Meeting News for Friday, June 29, 2018**

**Regional Duty Officer (630.917.8455): Aaron McCraw**  
**Teleconference Number: (800) 779-9565; Passcode:**   (b)(6)  
**Note: This newsletter may contain pre-decisional info. Do not distribute outside the NRC.**

Behaviors of High Trust Leaders: Clarify Expectations

Disclose and reveal expectations. Discuss them. Validate them. Renegotiate them if needed and possible. Don't violate expectations. Don't assume that expectations are clear or shared.

**Support Issues:**

RA: Jack Giessner is acting RA today.

DRP: 1) Survey for feedback on Regional Counterpart meeting is open. You can find the survey here: <https://www.surveymonkey.com/r/D6XL9BM>  
2) Please respond to Ann Marie's e-mail regarding service life training. Use vote buttons to indicate your attendance at the previous session so she can gauge the need for makeup session(s).

DRS:

DNMS: Starting Monday, July 2, Jack will be rotating to Region I as the Deputy RA. Good luck, Jack!

DRMA:

EICS: Biannual audit of allegation program was completed yesterday. Region III earned high marks. Special thanks to our hardworking EICS staff, but thanks to all who contribute to program's success

STATES:

PAO: HAPPY FRIDAY!!! See [NRC in the News Today](#), plus First Energy has offered buyouts to approximately 600 corporate office employees.

**Materials Events/Issues:**

**Reactor Events:**

**Part 21:**

**Plant Status**

**BRANCH 1 – Hot weather alerts**

Clinton: 1) Special Inspection (SIT) for the Emergency Diesel Generator exit today.  
2) Today is site's Take Your Kid to Work Day

DAEC:

Quad Cities: Ribbon cutting ceremony for new training building today; media expected to be on site, no planned interactions with resident inspectors.

**BRANCH 2**

DC Cook: 1) Hot weather alert; 2) Monitoring dose rates on recently loaded cask, DNMS is aware.

Prairie Island: Number of Minnesota state reps on site for tour/outreach, no planned interaction with resident inspectors.

Monticello:

**BRANCH 3**

Byron: Hot weather alert

Braidwood: 1) Hot weather alert; 2) Maintenance complete and systems restored.

Palisades:

**BRANCH 4**

(b)(5)

Davis Besse:

(b)(5)

Point Beach: Might get up to 80° - toasty!!!

Dresden: Monitoring lake temps – currently 85°, can operate up to 90° for limited time,  
95° is absolute limit.

**BRANCH 5 – Hot weather alerts**

Fermi:

LaSalle:

Perry: Depending on weather, may have to derate to 86% due to cooling tower  
efficiency

**NRR:**

**Additional Support Issues –**

**Other Issues –**

**Personnel News –**

**Daily Notes/Preliminary Notification** – will determine if one is needed for Clinton exit

**One Week Look Ahead –**

**Post 8:15 Meeting Topics –**

## The Daily Morning Meeting News for Friday, June 29, 2018

**Regional Duty Officer (630.917.8455): Aaron McCraw**

**Teleconference Number: (800) 779-9565; Passcode:** [REDACTED] (b)(6)

(b)(5)

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#### **BRANCH 4**

(b)(5)

Davis Besse: [REDACTED]

(b)(5)

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#### **BRANCH 5 – Hot weather alerts**

Fermi:

LaSalle:

Perry: Depending on weather, may have to derate to 86% due to cooling tower efficiency

#### **NRR:**

#### **Additional Support Issues –**

#### **Other Issues –**

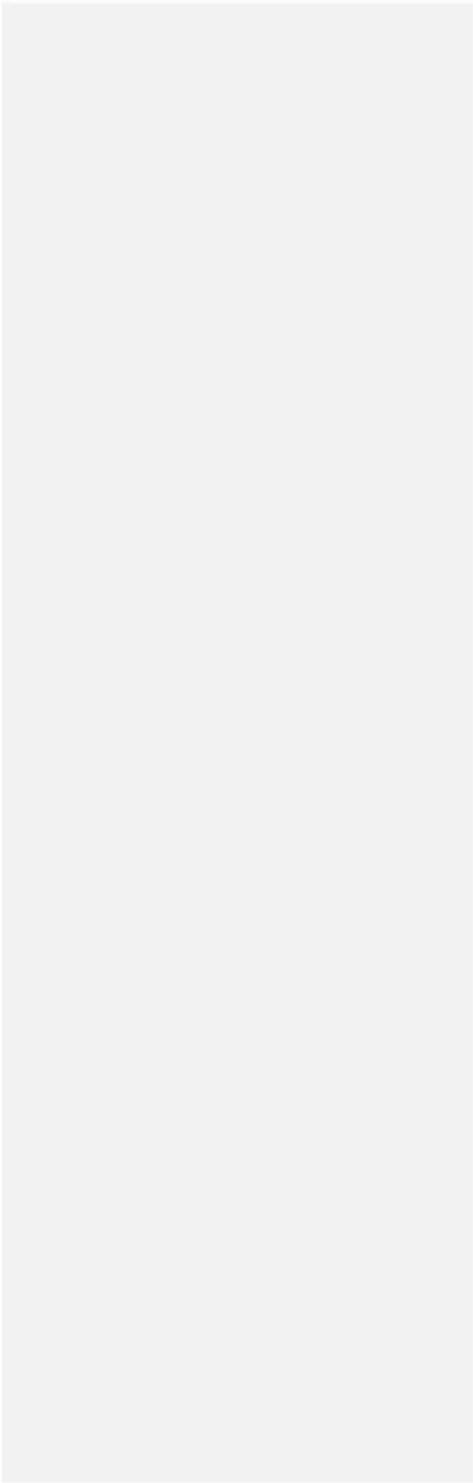
#### **Personnel News –**

**Daily Notes/Preliminary Notification** – will determine if one is needed for Clinton exit

#### **One Week Look Ahead –**



Post 8:15 Meeting Topics –



**From:** [Murray, Robert](#)  
**To:** [Louden, Patrick](#)  
**Cc:** [Lara, Julio](#); [Karla Stoedter \(Karla.Stoedter@nrc.gov\)](#); [Riemer, Kenneth](#); [Phillips, Charles](#); [Draper, Jason](#); [Sanchez Santiago, Elba](#); [Sargis, Daniel](#); [Kozak, Laura](#); [Stone, AnnMarie](#)  
**Subject:** Clinton SIT Discussion - Licensee Identified  
**Date:** Monday, July 02, 2018 1:09:00 PM

---

Pat/ All-

During the SIT exit last week, the licensee had asked about credit for some of the findings that we exited. I wanted to share some of my thoughts on the discussion as we are considering the licensee's feedback.

Consider the following definitions and discussion related to credit for identification.

Definitions from 0612:

03.05 Licensee-Identified. Licensee-identified findings and violations are **(1) identified as a result of deliberate observation by licensee personnel**; and (2) entered into the licensee corrective action program. **Examples of deliberate observations that result in licensee-identified findings or violations include** (1) those identified during activities such as post maintenance testing, **operator rounds**, engineering walkdowns, drills, critiques, or audits; and (2) degraded conditions identified during testing which do not result in test failure.

03.09 NRC-Identified. NRC-identified findings or violations are found by NRC inspectors, of which the licensee was not previously aware or had not been previously documented in the licensee's corrective action program. NRC-identified findings or violations **also include issues initially identified by the licensee to which the inspector has identified inadequacies in the licensee's characterization or evaluation of the issue of concern.**

03.17 Self-Revealed. Self-revealed findings or violations are those identified as a result of a condition that (1) become apparent through a readily detectable degradation in material condition, capability, or functionality of equipment or plant operations; and **(2) does not meet the definition of licensee-identified or NRC-identified.** Examples of self-revealed findings or violations include those revealed through: unplanned reactor trips and secondary plant transients; obvious equipment and piping failures; failed on demand testing; valid plant or electronic dosimeter alarms; identification of large quantities of fluids in areas where one would not normally expect such a condition.

From IMC 0612, Appendix B

Block 5 **Is the finding licensee-identified?** In determining whether a finding is licensee-identified, NRC-identified, or self-revealing, **a measure of subjectivity is anticipated and accepted.** To make these determinations, **inspectors and regional staff should consider not only the definitions of these terms, but also past experience, related precedents, and the over-arching regulatory message that the determination could send.**

(b)(5)

(b)(5)

Sincerely,

Rob

**From:** [Murray, Robert](#)  
**To:** [Murray, Robert](#)  
**Subject:** documents  
**Date:** Monday, July 02, 2018 10:53:50 AM  
**Attachments:** [charter items.docx](#)  
[operator rounds.docx](#)  
[Rounds Points Crit V.docx](#)

---

attached

5. Understand whether there were any deficiencies in operator training (both licensed and nonlicensed operators) which contributed to the EDG unavailability and the failure to identify the condition across multiple operating shifts. **Murray**

(b)(5)

7. Evaluate licensee planned and completed corrective actions following the EDG event to the extent possible and assess if prior opportunities (e.g., surveillances, maintenance, and self or nuclear oversight assessments) existed to have identified the problem at an earlier point in time. **Murray**

(b)(5)

(b)(5)

(b)(5)

The inspectors identified a performance deficiency for the licensee's failure to perform operator rounds and general area checks in accordance with procedure OP-AA-102-102, "General Area Checks and Operator Field Rounds," Revision 15, which states, in part:

3.2 Equipment Operators (EOs) are responsible for:

3.2.5. Validating parameters through multiple, independent means, avoiding undue focus on any single indicator.

4.4.4. **PERFORM** the General Area Checks while conducting rounds. Area checks may include, but are **not** limited to the following:

...  
— Gauges, meters, **and** indications within normal bands

...  
4.4.7. **PERFORM** Equipment Checks to monitor equipment condition. Equipment checks may include, but are **not** limited to the following:

...  
— Suction, discharge, **and** recirculation flowpaths available  
— Suction **and** discharge pressure normal

...  
4.4.8. **PERFORM** the Operator Field Rounds.

1. **VALIDATE** parameters through multiple, independent means, avoiding undue focus on any single indicator...

Contrary to the above, from May 11-17, 2018, five separate equipment operators performed operator rounds in the DG 2 room on at least 12 occasions, and failed to perform equipment checks to monitor equipment conditions by validating parameters using multiple independent means. Specifically, equipment operators failed to identify two diesel generator air start isolation valves were in the closed position (air start flow path), in addition to failing to identify multiple downstream air pressure indications, on two separate local diesel control panels, was not within the normal band.

Inspectors determined this issue was more than minor because it was associated with the Mitigating Systems cornerstone attribute of Configuration Control and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage).

The inspectors evaluated the significance of the finding using IMC 0609, Appendix G, Shutdown Operations Significance Determination Process Phase 1 Initial Screening and Characterization of Findings, Exhibit 3, Mitigating Systems, and determined the finding screened as having very low safety significance (Green).

The inspectors did not identify a violation of regulatory requirements associated with this finding.



(b)(5)

**From:** [Kozak, Laura](#)  
**To:** [Stoedter, Karla](#); [Phillips, Charles](#)  
**Cc:** [Riemer, Kenneth](#)  
**Subject:** IFRB for Clinton  
**Date:** Monday, July 02, 2018 11:23:44 AM  
**Attachments:** [ifrb.docx](#)

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Chuck, Karla

Attached is a draft IFRB form for Clinton. We will need an IFRB and a planning SERP. Can we shoot for an IFRB next week?

I filled in the portions related to the SDP screening and the detailed risk evaluation, the branch will need to fill in the info about the PD, etc.

I would like to run this past Jeff Mitman early next week, so when you complete the form, can you send it back to me for final edits.

Thanks  
Laura

EXHIBIT 1 – IFRB FINDING FORM

<u>IFRB Cover Sheet</u>	
<b>Facility Name/Location:</b> Clinton	<b>Name of Utility or Licensee:</b> Click here to enter text.
<b>Docket Number(s):</b> Click here to enter text.	<b>EA Number: EA-Click here to enter text.</b>
<b>Responsible Inspection Branch/Sponsor: Click here to enter text.</b>	

(b)(5)

Issue Date: (b)(5)

Exh1-1

0609.05TP

(b)(5)

(b)(5)

Issue Date:

Exh1-2

0609.05TP

(b)(5)

Issue Date: (b)(5)

Exh1-3

0609.05TP

(b)(5)

(b)(5)

Issue Date:

Exh1-4

0609.05TP

(b)(5)

Issue Date: (b)(5)

Exh1-5

0609.05TP

(b)(5)

Issue Date:

(b)(5)

Exh1-6

0609.05TP



(b)(5)

Issue Date: (b)(5)

Exh1-7

0609.05TP

(b)(5)

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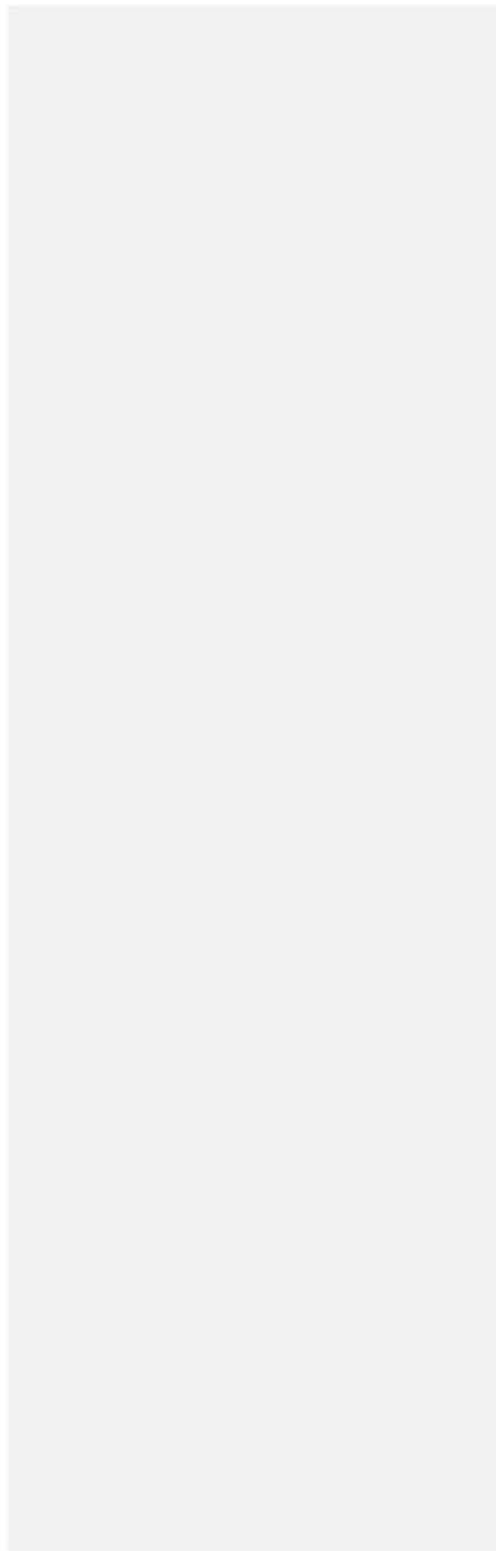
Exh1-8

0609.05TP

Issue Date: (b)(5)

Att1-1

0609.05TP



**From:** [Murray, Robert](#)  
**To:** [Stone, AnnMarie](#)  
**Subject:** RE: Clinton SIT Discussion - Licensee Identified  
**Date:** Monday, July 02, 2018 3:29:00 PM  
**Attachments:** [documents.msg](#)

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Thanks, AnnMarie. Maybe Chuck can brief you and Karla, together, on Thursday or Friday when she is back in the office. He may be able to shed more light on what I am referring to. I can also talk with you more on Friday –   (b)(6)

See attached for my draft finding notes from the exit.

Rob

---

**From:** Stone, AnnMarie  
**Sent:** Monday, July 02, 2018 3:13 PM  
**To:** Murray, Robert <[Robert.Murray@nrc.gov](mailto:Robert.Murray@nrc.gov)>  
**Subject:** RE: Clinton SIT Discussion - Licensee Identified

Rob,

Your insights below are spot on. I am interested in the specifics of the findings – perhaps I can assist with the Id credit.

Ann Marie

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**From:** Murray, Robert  
**Sent:** Monday, July 02, 2018 1:09 PM  
**To:** Loudon, Patrick <[Patrick.Louden@nrc.gov](mailto:Patrick.Louden@nrc.gov)>  
**Cc:** Lara, Julio <[Julio.Lara@nrc.gov](mailto:Julio.Lara@nrc.gov)>; Stoedter, Karla <[Karla.Stoedter@nrc.gov](mailto:Karla.Stoedter@nrc.gov)>; Riemer, Kenneth <[Kenneth.Riemer@nrc.gov](mailto:Kenneth.Riemer@nrc.gov)>; Phillips, Charles <[Charles.Phillips@nrc.gov](mailto:Charles.Phillips@nrc.gov)>; Draper, Jason <[Jason.Draper@nrc.gov](mailto:Jason.Draper@nrc.gov)>; Sanchez Santiago, Elba <[Elba.SanchezSantiago@nrc.gov](mailto:Elba.SanchezSantiago@nrc.gov)>; Sargis, Daniel <[Daniel.Sargis@nrc.gov](mailto:Daniel.Sargis@nrc.gov)>; Kozak, Laura <[Laura.Kozak@nrc.gov](mailto:Laura.Kozak@nrc.gov)>; Stone, AnnMarie <[AnnMarie.Stone@nrc.gov](mailto:AnnMarie.Stone@nrc.gov)>  
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Sincerely,

Rob

**From:** Murray, Robert  
**Sent:** Mon, 2 Jul 2018 15:53:48 +0000  
**To:** Murray, Robert  
**Subject:** documents  
**Attachments:** operator rounds.docx, Rounds Points Crit V.docx

attached

The inspectors identified a performance deficiency for the licensee's failure to perform operator rounds and general area checks in accordance with procedure OP-AA-102-102, "General Area Checks and Operator Field Rounds," Revision 15, which states, in part:

3.2 Equipment Operators (EOs) are responsible for:

3.2.5. Validating parameters through multiple, independent means, avoiding undue focus on any single indicator.

4.4.4. **PERFORM** the General Area Checks while conducting rounds. Area checks may include, but are **not** limited to the following:

...  
— Gauges, meters, **and** indications within normal bands

...  
4.4.7. **PERFORM** Equipment Checks to monitor equipment condition. Equipment checks may include, but are **not** limited to the following:

...  
— Suction, discharge, **and** recirculation flowpaths available  
— Suction **and** discharge pressure normal

...  
4.4.8. **PERFORM** the Operator Field Rounds.

1. **VALIDATE** parameters through multiple, independent means, avoiding undue focus on any single indicator...

Contrary to the above, from May 11-17, 2018, five separate equipment operators performed operator rounds in the DG 2 room on at least 12 occasions, and failed to perform equipment checks to monitor equipment conditions by validating parameters using multiple independent means. Specifically, equipment operators failed to identify two diesel generator air start isolation valves were in the closed position (air start flow path), in addition to failing to identify multiple downstream air pressure indications, on two separate local diesel control panels, was not within the normal band.

Inspectors determined this issue was more than minor because it was associated with the Mitigating Systems cornerstone attribute of Configuration Control and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage).

The inspectors evaluated the significance of the finding using IMC 0609, Appendix G, Shutdown Operations Significance Determination Process Phase 1 Initial Screening and Characterization of Findings, Exhibit 3, Mitigating Systems, and determined the finding screened as having very low safety significance (Green).

The inspectors did not identify a violation of regulatory requirements associated with this finding.



(b)(5)

**From:** [Mitman, Jeffrey](#)  
**To:** [Circle, Jeff](#); [Fong, CJ](#)  
**Cc:** [Kozak, Laura](#)  
**Subject:** RE: Clinton SIT Status  
**Date:** Tuesday, July 03, 2018 5:53:27 PM

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Jeff,

To the best of my recollection, the system lineups were all normal for shutdown conditions with the obvious exception that TS requires an operable EDG during most configurations. Clinton did not meet this requirement for a period of slightly more than 3 days.

Jeff Mitman

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**From:** Circle, Jeff  
**Sent:** Friday, June 29, 2018 5:23 AM  
**To:** Mitman, Jeffrey <[Jeffrey.Mitman@nrc.gov](mailto:Jeffrey.Mitman@nrc.gov)>; Fong, CJ <[CJ.Fong@nrc.gov](mailto:CJ.Fong@nrc.gov)>  
**Cc:** Kozak, Laura <[Laura.Kozak@nrc.gov](mailto:Laura.Kozak@nrc.gov)>  
**Subject:** RE: Clinton SIT Status

Jeff,

Thanks for the summary. As you mentioned earlier, this finding is an excellent mentoring opportunity for you. We can talk after you and CJ both get back from leave after next week. This finding will be a challenge. During the exposure time period, did you notice any unusual system alignments that would cause a significant change in risk?

After you get back, I'll be back in the office on Tuesday 7/10/18.

Jeff.

---

**From:** Mitman, Jeffrey  
**Sent:** Thursday, June 28, 2018 8:28 PM  
**To:** Fong, CJ <[CJ.Fong@nrc.gov](mailto:CJ.Fong@nrc.gov)>  
**Cc:** Circle, Jeff <[Jeff.Circle@nrc.gov](mailto:Jeff.Circle@nrc.gov)>; Kozak, Laura <[Laura.Kozak@nrc.gov](mailto:Laura.Kozak@nrc.gov)>  
**Subject:** Clinton SIT Status

(b)(5)

(b)(5)

As a reminder I'm on  However, If you need to talk, we can make arrangements.

(b)(6)

Jeff Mitman

Note to requester: The attachment to this email has been withheld in its entirety under FOIA Ex. B5 (deliberative process privilege).

**From:** [Kozak, Laura](#)  
**To:** [Phillips, Charles](#)  
**Cc:** [Mitman, Jeffrey](#); [Stoedter, Karla](#)  
**Subject:** SDP phase 1 and 2 for the inspection report  
**Date:** Tuesday, July 03, 2018 10:11:23 AM  
**Attachments:** [phase 2 SDP input to report.docx](#)

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Chuck

Please see attached. I drafted the SDP phase 1 and 2 discussion for the report input. Please review and discuss any necessary changes. Jeff – if you have any comments please let me know.

I drafted this assuming we issue the report significance “TBD” given that we are planning to perform a phase 3 SDP evaluation. We often choose not to issue reports until the phase 3 SDP is complete, so if we choose another path, this write-up will need to change. But I wanted to you have it if we move forward with what was exited last week.

Laura

(b)(5)

(b)(5)

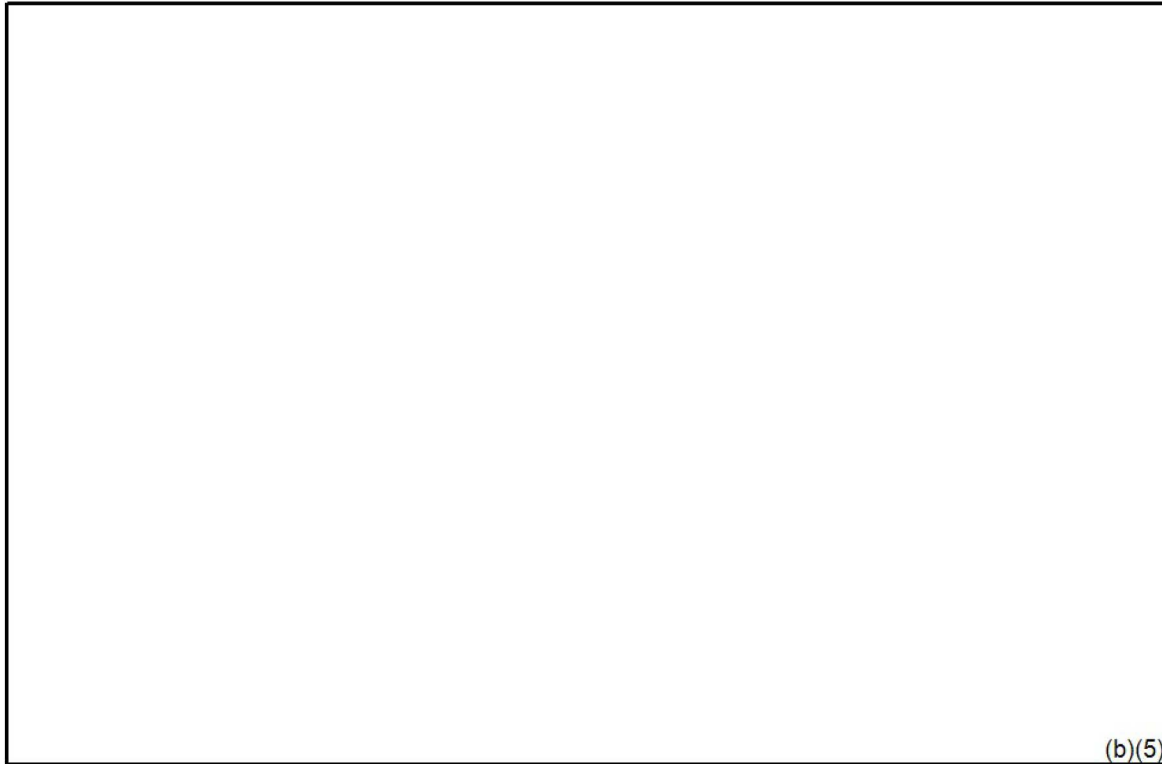


Note to requester: The first 3 attachments to this email are withheld in their entirety under FOIA Ex. B5 (deliberative process privilege). The 4th attachment is a non-responsive record due to clarifying the request to exclude licensee originated documents.

**From:** [Kozak, Laura](#)  
**To:** [Mitman, Jeffrey](#)  
**Subject:** Clinton  
**Date:** Thursday, July 05, 2018 12:37:00 PM  
**Attachments:** [LOOPSD.bmp](#)  
[Observations on crosstie.docx](#)  
[CALCULATION NUMBER A.1.13 - Div 3 cross tie, CPS PRA 2014.docx](#)  
[DB430301-04 4303.01 - Extensive Damage Mitigation Guide \(B.5.b\) SHORTENED Page 62on.pptx](#)

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Jeff



Laura

**From:** [Kozak, Laura](#)  
**To:** [Arner, Frank](#); [Hanna, John](#); [Macdonald, George](#); [Valos, Nicholas](#); [Deese, Rick](#); [Loveless, David](#); [Freeman, Scott](#)  
**Cc:** [Mitman, Jeffrey](#)  
**Subject:** RE: FW: Follow-up to FLEX meeting from yesterday  
**Date:** Thursday, July 05, 2018 8:00:25 AM

---

Thanks for sharing Frank.

Jeff Mitman and I are working on a shutdown issue at Clinton where both EDGs were unavailable. FLEX is going to play a role and the licensee is already claiming E-3 failure rates.

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**From:** Arner, Frank  
**Sent:** Thursday, July 05, 2018 7:30 AM  
**To:** Hanna, John <[John.Hanna@nrc.gov](mailto:John.Hanna@nrc.gov)>; Macdonald, George <[George.MacDonald@nrc.gov](mailto:George.MacDonald@nrc.gov)>; Kozak, Laura <[Laura.Kozak@nrc.gov](mailto:Laura.Kozak@nrc.gov)>; Valos, Nicholas <[Nicholas.Valos@nrc.gov](mailto:Nicholas.Valos@nrc.gov)>; Deese, Rick <[Rick.Deese@nrc.gov](mailto:Rick.Deese@nrc.gov)>; Loveless, David <[David.Loveless@nrc.gov](mailto:David.Loveless@nrc.gov)>; Freeman, Scott <[Scott.Freeman@nrc.gov](mailto:Scott.Freeman@nrc.gov)>  
**Subject:** FW: FW: Follow-up to FLEX meeting from yesterday

Just FYI, we've seen when we've asked for start data (success vs. failures) in some cases very elevated failure rates for FLEX equipment. I'm also aware of several licensees already incorporating FLEX directly into their models with failure rates to start in the area of 1E-3. Let's just say I'm very skeptical of any failure rates being applied, especially given this recent insight from one Licensee contacting EPRI where EPRI has basically transferred the ball to the owners groups. I'm not even sure the equipment failure rates even given N+1, wouldn't be equivalent or higher than human error probabilities at this point.

From Hope Creek representatives contacting EPRI:

I spoke to the EPRI FLEX database people after our meeting. EPRI has received requests to use the FLEX database information to develop FLEX component failure rates; however, EPRI determined that the data, in its current form, was not adequate to develop accurate component failure rates. Last month they turned over the task to the PWR and BWR owner's groups. The owner's groups have the action to develop the controls necessary to accurately gather the information for developing failure rates. The EPRI person that I spoke to did not have a timeline for the owner's groups action

F

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**From:** Arner, Frank  
**Sent:** Thursday, July 05, 2018 8:18 AM  
**To:** Montecalvo, Michael <[Michael.Montecalvo@nrc.gov](mailto:Michael.Montecalvo@nrc.gov)>; Helton, Donald <[Donald.Helton@nrc.gov](mailto:Donald.Helton@nrc.gov)>; Fong, CJ <[CJ.Fong@nrc.gov](mailto:CJ.Fong@nrc.gov)>; Circle, Jeff <[Jeff.Circle@nrc.gov](mailto:Jeff.Circle@nrc.gov)>  
**Cc:** Humberstone, Matthew <[Matthew.Humberstone@nrc.gov](mailto:Matthew.Humberstone@nrc.gov)>  
**Subject:** RE: FW: Follow-up to FLEX meeting from yesterday

Fair enough comment Mike, as I'm not one to have been a big proponent of making that



(b)(5)

push to Maintenance Rule requirements regarding FLEX.

(b)(5)

F

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**From:** Montecalvo, Michael

**Sent:** Thursday, July 05, 2018 8:09 AM

**To:** Arner, Frank <[Frank.Arner@nrc.gov](mailto:Frank.Arner@nrc.gov)>; Helton, Donald <[Donald.Helton@nrc.gov](mailto:Donald.Helton@nrc.gov)>; Fong, CJ <[CJ.Fong@nrc.gov](mailto:CJ.Fong@nrc.gov)>; Circle, Jeff <[Jeff.Circle@nrc.gov](mailto:Jeff.Circle@nrc.gov)>

**Cc:** Humberstone, Matthew <[Matthew.Humberstone@nrc.gov](mailto:Matthew.Humberstone@nrc.gov)>

**Subject:** RE: FW: Follow-up to FLEX meeting from yesterday

This seems to be a common misconception that needs to be cleared up, we did not agree to a blanket "out" for not scoping FLEX into the MR. The scoping is based on the use of the equipment, just as it always has been and how it is done for any other piece of equipment. In fact, if you look at the current revision we put additional restrictions on what the licensee can do when they are using FLEX equipment as an additional defense in depth measure.

The reg guide endorsing the 4f revision to NUMARC 93-01 is in the concurrence process right now and should be going out for public comment soon, if it hasn't already.

Mike

---

**From:** Arner, Frank

**Sent:** Friday, June 29, 2018 10:20 AM

**To:** Helton, Donald <[Donald.Helton@nrc.gov](mailto:Donald.Helton@nrc.gov)>; Fong, CJ <[CJ.Fong@nrc.gov](mailto:CJ.Fong@nrc.gov)>; Circle, Jeff <[Jeff.Circle@nrc.gov](mailto:Jeff.Circle@nrc.gov)>; Montecalvo, Michael <[Michael.Montecalvo@nrc.gov](mailto:Michael.Montecalvo@nrc.gov)>

**Subject:** RE: FW: Follow-up to FLEX meeting from yesterday

Any presentation developed for the DDCM meeting, in my opinion should include or incorporate the severity of uncertainty that seems to exist with this equipment – especially in the realm of reliability of the equipment based on actual test data. The path of not incorporating FLEX into the MR has made this that much more of a question mark.

F

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**From:** Arner, Frank

**Sent:** Friday, June 29, 2018 10:18 AM

**To:** Helton, Donald <[Donald.Helton@nrc.gov](mailto:Donald.Helton@nrc.gov)>; Fong, CJ <[CJ.Fong@nrc.gov](mailto:CJ.Fong@nrc.gov)>; Circle, Jeff <[Jeff.Circle@nrc.gov](mailto:Jeff.Circle@nrc.gov)>; Montecalvo, Michael <[Michael.Montecalvo@nrc.gov](mailto:Michael.Montecalvo@nrc.gov)>

**Subject:** FW: FW: Follow-up to FLEX meeting from yesterday

I am forwarding this to ensure you are all aware (you probably are) with the difficulties the industry is apparently having in gathering FLEX equipment reliability data. I know having led 4 or 5 of the TI 191 inspections, the failure rates for start are much, much higher than 1 in 1000 for this equipment based on actual attempts and failures seen that have been documented within the CA program. I also am aware Licensee's have already began incorporating FLEX equipment into their models with failure to start rates of 1E-3. I do believe in FLEX credit but I'm still an advocate of keeping it simple, (for example a top mitigating box at the end of SBO sequences with FLEX – using a 0.1 or 0.2 value only in sequences where FLEX can succeed....successful DEP, Load Shedding, Containment Venting if applicable.

---

**From:** Hawkins, Justin

**Sent:** Monday, June 18, 2018 4:21 AM

**To:** Arner, Frank <[Frank.Arner@nrc.gov](mailto:Frank.Arner@nrc.gov)>

**Subject:** FW: FW: Follow-up to FLEX meeting from yesterday

For awareness. PSEG responded to my FLEX reporting questions. Let me know if this sounds appropriate to you.

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**From:** Hawkins, Justin [<mailto:Justin.Hawkins@pseg.com>]

**Sent:** Monday, June 18, 2018 4:20 AM

**To:** Hawkins, Justin <[Justin.Hawkins@nrc.gov](mailto:Justin.Hawkins@nrc.gov)>

**Subject:** [External\_Sender] FW: Follow-up to FLEX meeting from yesterday



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**From:** Koppel, Peter J.

**Sent:** Friday, June 15, 2018 7:36 AM

**To:** Hawkins, Justin; Timberman, Tanya J; MacEwen, Thomas T.

**Cc:** Haney, Sherlyn; Banner, Craig W.; Franklin, Danny; Baker, Joseph W.; Stith, Gary M.; Dior, Mitchell S.

**Subject:** RE: Follow-up to FLEX meeting from yesterday

Justin,

I spoke to the EPRI FLEX database people after our meeting. EPRI has received requests to use the FLEX database information to develop FLEX component failure rates; however, EPRI determined that the data, in its current form, was not adequate to develop accurate component failure rates. Last

month they turned over the task to the PWR and BWR owner's groups. The owner's groups have the action to develop the controls necessary to accurately gather the information for developing failure rates. The EPRI person that I spoke to did not have a timeline for the owner's groups action.

Listed below are the notifications that we have added to the EPRI FLEX database. The criteria we used was component failures (failures to start or failures in operation), and anything we (Salem, Hope Creek, Corporate) felt was worthy of sharing with the remainder of the industry.

Non Responsive

Non Responsive

Peter Koppel  
X2835

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**From:** Hawkins, Justin  
**Sent:** Thursday, June 14, 2018 4:29 AM  
**To:** Timberman, Tanya J; MacEwen, Thomas T.; Koppel, Peter J.  
**Cc:** Haney, Sherlyn  
**Subject:** Follow-up to FLEX meeting from yesterday

Tanya,

I spoke to Frank Arner (Regional SRA – Senior Risk Analyst) about his concerns regarding FLEX equipment failure reporting. Based on this conversation, I would like to see the information that is submitted to the industry (December 2017 and June 2018) and the criteria for submittal.

Thanks,

Justin Hawkins  
HC SRI  
X1078

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**From:** [Stoedter, Karla](#)  
**To:** [Kozak, Laura](#)  
**Subject:** Clinton EDG Unavailability IFRB .docm  
**Date:** Monday, July 09, 2018 1:22:00 PM  
**Attachments:** [Clinton EDG Unavailability IFRB .docm](#)

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Laura,  
Here is the current IFRB worksheet for Clinton. I'm still trying to schedule something for Wednesday.  
Karla

EXHIBIT 1 – IFRB FINDING FORM

<u>IFRB Cover Sheet</u>	
Facility Name/Location: Clinton	Name of Utility or Licensee: Exelon
Docket Number(s): 50-461	EA Number: EA-Click here to enter text.
(b)(5)	

Issue Date: (b)(5)

Exh1-1

0609.05TP

(b)(5)

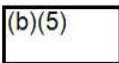
Issue Date: (b)(5)

Exh1-2

0609.05TP

(b)(5)



Issue Date: 

Exh1-3

0609.05TP



(b)(5)

Issue Date: (b)(5)

Exh1-4

0609.05TP

(b)(5)

Issue Date: (b)(5)

Exh1-5

0609.05TP

(b)(5)

Issue Date:

(b)(5)

Exh1-6

0609.05TP

(b)(5)

Issue Date: (b)(5)

Exh1-7

0609.05TP

(b)(5)

Issue Date: (b)(5)

Exh1-8

0609.05TP

(b)(5)



Issue Date: 

Exh1-9

0609.05TP

(b)(5)

Issue Date: (b)(5)

Exh1-10

0609.05TP

(b)(5)

Issue Date: (b)(5)

Exh1-11

0609.05TP



(b)(5)

Issue Date:

(b)(5)

Exh1-12

0609.05TP

Issue Date: (b)(5)

Att1-1

0609.05TP

**From:** [Kozak, Laura](#)  
**To:** [Fong, CJ](#); [Arner, Frank](#); [Montecalvo, Michael](#)  
**Cc:** [Humberstone, Matthew](#); [Helton, Donald](#); [Circle, Jeff](#); [Loveless, David](#); [Deese, Rick](#); [Cahill, Christopher](#); [Freeman, Scott](#); [Macdonald, George](#); [Hanna, John](#); [Mitman, Jeffrey](#)  
**Subject:** RE: FW: Follow-up to FLEX meeting from yesterday  
**Date:** Wednesday, July 11, 2018 8:19:13 AM

---

Thanks for the update CJ. I'm glad this is a priority in NRR. Jeff M and I are working on the Clinton issue which will need to consider FLEX. I find it is much more complicated than just "adding" credit to the model for Flex, whether it be .1, .3, or E-3 (as the licensee is suggesting).

Our issue is a shutdown issue. The generic Appendix G model credits the use of an installed DD fire pump for injection with recovery of offsite power if SBO occurs. This is given quite a bit of credit. What we find when we go to the site is that in all likelihood this is not the strategy that would be used and if the preferred strategies fail (FLEX or Division 3 cross tie), it is unlikely for the "old" strategy to work. Yet, I find it hard to believe that the new strategies will be as reliable as the generic assumptions in the Appendix G event tree.

The licensee has suggested that the first preferred strategy would be to use the Division 3 crosstie. Maybe that is true. But if it is, that has implications for compliance with the Order, as the scenario portrayed by the order does not postulate other failures, meaning Division 3 would be available. Yet, the licensee told us they would declare ELAP, enter FLEX procedures, and discontinue the use of other procedures in all of the responses to the new requirement. Now, in this SDP evaluation, they seem to be saying something different.

Both implementing the cross-tie or FLEX have implications for recovery of OSP and the EDG (both less likely to be successful) and there is some dependency between the cross-tie and FLEX that must be considered.

The positives about Clinton are that a diesel was recoverable and the exposure time is short.

Laura

---

**From:** Fong, CJ  
**Sent:** Wednesday, July 11, 2018 7:23 AM  
**To:** Arner, Frank <Frank.Arner@nrc.gov>; Montecalvo, Michael <Michael.Montecalvo@nrc.gov>  
**Cc:** Humberstone, Matthew <Matthew.Humberstone@nrc.gov>; Helton, Donald <Donald.Helton@nrc.gov>; Circle, Jeff <Jeff.Circle@nrc.gov>; Loveless, David <David.Loveless@nrc.gov>; Deese, Rick <Rick.Deese@nrc.gov>; Kozak, Laura <Laura.Kozak@nrc.gov>; Cahill, Christopher <Christopher.Cahill@nrc.gov>; Freeman, Scott <Scott.Freeman@nrc.gov>; Macdonald, George <George.MacDonald@nrc.gov>; Hanna, John <John.Hanna@nrc.gov>  
**Subject:** RE: FW: Follow-up to FLEX meeting from yesterday

No problem, Frank. FYI, I view the development of a practical, technically-credible, transparent FLEX approach for oversight (including SDPs, NOEDs) as one of APHB's top priorities. Matt and Mike are doing an excellent job managing this project, especially

considering the fact that the EPRI-industry data collection effort failed open.

I'm cautiously optimistic that the reboot of the data collection initiative (with PWROG now in control) will be successful but we need to maintain focus and constant engagement with industry on this topic. To that end, I have discussed this with the NRR Deputy Office Director and I have placed this on the agenda for the upcoming meeting with the BWROG senior management and our SESers. I will also be meeting with the PWROG in August to ascertain their progress on this issue. I'll keep you posted.

Thanks,

*CJ Fong, P.E.*

Chief, PRA Operations and Human Factors Branch (APHB)  
Division of Risk Assessment  
Office of Nuclear Reactor Regulation  
(301) 415-8474

---

**From:** Arner, Frank

**Sent:** Wednesday, July 11, 2018 7:09 AM

**To:** Fong, CJ <[CJ.Fong@nrc.gov](mailto:CJ.Fong@nrc.gov)>; Montecalvo, Michael <[Michael.Montecalvo@nrc.gov](mailto:Michael.Montecalvo@nrc.gov)>

**Cc:** Humberstone, Matthew <[Matthew.Humberstone@nrc.gov](mailto:Matthew.Humberstone@nrc.gov)>; Helton, Donald <[Donald.Helton@nrc.gov](mailto:Donald.Helton@nrc.gov)>; Circle, Jeff <[Jeff.Circle@nrc.gov](mailto:Jeff.Circle@nrc.gov)>; Loveless, David <[David.Loveless@nrc.gov](mailto:David.Loveless@nrc.gov)>; Deese, Rick <[Rick.Deese@nrc.gov](mailto:Rick.Deese@nrc.gov)>; Kozak, Laura <[Laura.Kozak@nrc.gov](mailto:Laura.Kozak@nrc.gov)>; Cahill, Christopher <[Christopher.Cahill@nrc.gov](mailto:Christopher.Cahill@nrc.gov)>; Freeman, Scott <[Scott.Freeman@nrc.gov](mailto:Scott.Freeman@nrc.gov)>; Macdonald, George <[George.MacDonald@nrc.gov](mailto:George.MacDonald@nrc.gov)>; Hanna, John <[John.Hanna@nrc.gov](mailto:John.Hanna@nrc.gov)>

**Subject:** RE: FW: Follow-up to FLEX meeting from yesterday

Excellent info, thanks for the update CJ. This should serve to address this important topic. I have used sensitivity studies before in SDPs with an event sequence END FLEX box turned on and off as desired, only applied in sequences which support the FLEX strategy. This ends up not quite being 0.1 credit, more like 0.17 in some cases, because it can only be applied in the proper sequences (i.e DEP successful, DC load strip successful, CV etc... I agree with this more basic strategy for now.

F

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**From:** Fong, CJ

**Sent:** Monday, July 09, 2018 8:04 AM



**To:** Arner, Frank <[Frank.Arner@nrc.gov](mailto:Frank.Arner@nrc.gov)>; Montecalvo, Michael <[Michael.Montecalvo@nrc.gov](mailto:Michael.Montecalvo@nrc.gov)>  
**Cc:** Humberstone, Matthew <[Matthew.Humberstone@nrc.gov](mailto:Matthew.Humberstone@nrc.gov)>; Helton, Donald <[Donald.Helton@nrc.gov](mailto:Donald.Helton@nrc.gov)>; Circle, Jeff <[Jeff.Circle@nrc.gov](mailto:Jeff.Circle@nrc.gov)>  
**Subject:** RE: FW: Follow-up to FLEX meeting from yesterday

(b)(6)

Hi, Frank. Sorry for the late response; [REDACTED] Here's the bottom line: the data at this point do not support failure rates in the 1E-3 / attempt range. Therefore, as an interim approach, we (the PRA community) need to use screening values (e.g., 0.1) and sensitivity studies. As Mike pointed out, Matt has developed some guidance on how to do this in a consistent and technically-sound manner.

As Mr. Kopel pointed out earlier in the thread, the PWROG has taken over the data gathering and analysis (they're going to do this for both PWRs and BWRs by the way). I believe their approach is a step change improvement from what EPRI attempted. Specifically, the PWROG will have a multi-disciplinary team (including PRA data people) looking at all *work orders*\* related to FLEX equipment. During my conversations with them, I specifically mentioned the scenarios that you have described in previous e-mails (e.g., truck battery used to start FLEX equip) and they assured me that their methodology would screen these events in and would count them as PRA failures. They also stated that recovery actions would be considered separately. In other words, such an event might be treated as a failure but with successful recovery action. They will provide APHB with an update on their progress in late August and have committed to sharing the draft and final results of their analysis with the NRC (although we will need to work out the details....we may want to engage INL on this). Their target is to complete this work by the end of 2018 but they didn't want to make a hard commitment. I have asked them to send us a letter outlining their proposed schedule so that we have something more tangible.

I hope this helps. I think this is a great topic for the DDCM but I want to make sure that we're all on the same page in terms of:

- A. How SDPs/NOEDs involving FLEX should be conducted now (i.e., given the current lack of FLEX data).
- B. The path forward.

Happy to chat if you'd like to discuss further.

Thanks,  
CJ

\*The PWROG agreed with your assessment that just looking at CRs might not capture all FLEX-related failures. They believe that looking at work orders will cast a wider net. I can't speak for every site/licensee but this is certainly consistent with my experience at Watts Bar (there was a *much* lower bar for writing a work order vs. a CR).

---

**From:** Arner, Frank

**Sent:** Thursday, July 05, 2018 9:13 AM

**To:** Montecalvo, Michael <[Michael.Montecalvo@nrc.gov](mailto:Michael.Montecalvo@nrc.gov)>

**Cc:** Humberstone, Matthew <[Matthew.Humberstone@nrc.gov](mailto:Matthew.Humberstone@nrc.gov)>; Helton, Donald <[Donald.Helton@nrc.gov](mailto:Donald.Helton@nrc.gov)>; Fong, CJ <[CJ.Fong@nrc.gov](mailto:CJ.Fong@nrc.gov)>; Circle, Jeff <[Jeff.Circle@nrc.gov](mailto:Jeff.Circle@nrc.gov)>

**Subject:** RE: FW: Follow-up to FLEX meeting from yesterday

Agreed...I'm a FLEX credit advocate for the most part, but certainly not comfortable with the application and failure rates being applied in some of the licensee model updates I'm seeing.

My plan, to get some feel, is to ask for every start attempt in the last few years of key FLEX equipment, and the result as part of a sensitivity to FLEX credit. Many of these issues, (failure of equipment) may not always be entered into the CR system. This gives at least some idea of where a particular plant may stand with reliability with a limited sample.

F

---

**From:** Montecalvo, Michael

**Sent:** Thursday, July 05, 2018 8:44 AM

**To:** Arner, Frank <[Frank.Arner@nrc.gov](mailto:Frank.Arner@nrc.gov)>

**Cc:** Humberstone, Matthew <[Matthew.Humberstone@nrc.gov](mailto:Matthew.Humberstone@nrc.gov)>; Helton, Donald <[Donald.Helton@nrc.gov](mailto:Donald.Helton@nrc.gov)>; Fong, CJ <[CJ.Fong@nrc.gov](mailto:CJ.Fong@nrc.gov)>; Circle, Jeff <[Jeff.Circle@nrc.gov](mailto:Jeff.Circle@nrc.gov)>

**Subject:** RE: FW: Follow-up to FLEX meeting from yesterday

Point certainly well taken Frank, the operating experience you have shared from the inspections is troubling. The owners groups taking this effort is a step in the right direction, as EPRI was trying to force fit their data collection efforts related to maintenance optimization to component failure rates and having a tough time doing it based on what data was being collected and how it was characterized. The fact that we are this far along with crediting the equipment and actions without reliable data is disappointing, and should be taken into account because it could potentially affect results. As long as we realize where we are with the current state of knowledge, we should still be able to make consistent regulatory decisions. The rules of engagement that Matt put together will help with that.

Mike

---

**From:** Arner, Frank

**Sent:** Thursday, July 05, 2018 8:18 AM

**To:** Montecalvo, Michael <[Michael.Montecalvo@nrc.gov](mailto:Michael.Montecalvo@nrc.gov)>; Helton, Donald <[Donald.Helton@nrc.gov](mailto:Donald.Helton@nrc.gov)>; Fong, CJ <[CJ.Fong@nrc.gov](mailto:CJ.Fong@nrc.gov)>; Circle, Jeff <[Jeff.Circle@nrc.gov](mailto:Jeff.Circle@nrc.gov)>

**Cc:** Humberstone, Matthew <[Matthew.Humberstone@nrc.gov](mailto:Matthew.Humberstone@nrc.gov)>

**Subject:** RE: FW: Follow-up to FLEX meeting from yesterday

Fair enough comment Mike, as I'm not one to have been a big proponent of making that push to Maintenance Rule requirements regarding FLEX.

(b)(5)

(b)(5)



(b)(5)

F

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**From:** Montecalvo, Michael  
**Sent:** Thursday, July 05, 2018 8:09 AM  
**To:** Arner, Frank <[Frank.Arner@nrc.gov](mailto:Frank.Arner@nrc.gov)>; Helton, Donald <[Donald.Helton@nrc.gov](mailto:Donald.Helton@nrc.gov)>; Fong, CJ <[CJ.Fong@nrc.gov](mailto:CJ.Fong@nrc.gov)>; Circle, Jeff <[Jeff.Circle@nrc.gov](mailto:Jeff.Circle@nrc.gov)>  
**Cc:** Humberstone, Matthew <[Matthew.Humberstone@nrc.gov](mailto:Matthew.Humberstone@nrc.gov)>  
**Subject:** RE: FW: Follow-up to FLEX meeting from yesterday

This seems to be a common misconception that needs to be cleared up, we did not agree to a blanket "out" for not scoping FLEX into the MR. The scoping is based on the use of the equipment, just as it always has been and how it is done for any other piece of equipment. In fact, if you look at the current revision we put additional restrictions on what the licensee can do when they are using FLEX equipment as an additional defense in depth measure.

The reg guide endorsing the 4f revision to NUMARC 93-01 is in the concurrence process right now and should be going out for public comment soon, if it hasn't already.

Mike

---

**From:** Arner, Frank  
**Sent:** Friday, June 29, 2018 10:20 AM  
**To:** Helton, Donald <[Donald.Helton@nrc.gov](mailto:Donald.Helton@nrc.gov)>; Fong, CJ <[CJ.Fong@nrc.gov](mailto:CJ.Fong@nrc.gov)>; Circle, Jeff <[Jeff.Circle@nrc.gov](mailto:Jeff.Circle@nrc.gov)>; Montecalvo, Michael <[Michael.Montecalvo@nrc.gov](mailto:Michael.Montecalvo@nrc.gov)>  
**Subject:** RE: FW: Follow-up to FLEX meeting from yesterday

Any presentation developed for the DDCM meeting, in my opinion should include or incorporate the severity of uncertainty that seems to exist with this equipment – especially in the realm of reliability of the equipment based on actual test data. The path of not incorporating FLEX into the MR has made this that much more of a question mark.

F

---

**From:** Arner, Frank  
**Sent:** Friday, June 29, 2018 10:18 AM  
**To:** Helton, Donald <[Donald.Helton@nrc.gov](mailto:Donald.Helton@nrc.gov)>; Fong, CJ <[CJ.Fong@nrc.gov](mailto:CJ.Fong@nrc.gov)>; Circle, Jeff <[Jeff.Circle@nrc.gov](mailto:Jeff.Circle@nrc.gov)>; Montecalvo, Michael <[Michael.Montecalvo@nrc.gov](mailto:Michael.Montecalvo@nrc.gov)>

**Subject:** FW: FW: Follow-up to FLEX meeting from yesterday

I am forwarding this to ensure you are all aware (you probably are) with the difficulties the industry is apparently having in gathering FLEX equipment reliability data. I know having led 4 or 5 of the TI 191 inspections, the failure rates for start are much, much higher than 1 in 1000 for this equipment based on actual attempts and failures seen that have been documented within the CA program. I also am aware Licensee's have already began incorporating FLEX equipment into their models with failure to start rates of 1E-3. I do believe in FLEX credit but I'm still an advocate of keeping it simple, (for example a top mitigating box at the end of SBO sequences with FLEX – using a 0.1 or 0.2 value only in sequences where FLEX can succeed....successful DEP, Load Shedding, Containment Venting if applicable.

---

**From:** Hawkins, Justin

**Sent:** Monday, June 18, 2018 4:21 AM

**To:** Arner, Frank <[Frank.Arner@nrc.gov](mailto:Frank.Arner@nrc.gov)>

**Subject:** FW: FW: Follow-up to FLEX meeting from yesterday

For awareness. PSEG responded to my FLEX reporting questions. Let me know if this sounds appropriate to you.

---

**From:** Hawkins, Justin [<mailto:Justin.Hawkins@pseg.com>]

**Sent:** Monday, June 18, 2018 4:20 AM

**To:** Hawkins, Justin <[Justin.Hawkins@nrc.gov](mailto:Justin.Hawkins@nrc.gov)>

**Subject:** [External\_Sender] FW: Follow-up to FLEX meeting from yesterday



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**From:** Koppel, Peter J.

**Sent:** Friday, June 15, 2018 7:36 AM

**To:** Hawkins, Justin; Timberman, Tanya J; MacEwen, Thomas T.

**Cc:** Haney, Sherlyn; Banner, Craig W.; Franklin, Danny; Baker, Joseph W.; Stith, Gary M.; Dior, Mitchell S.

**Subject:** RE: Follow-up to FLEX meeting from yesterday

Justin,

I spoke to the EPRI FLEX database people after our meeting. EPRI has received requests to use the FLEX database information to develop FLEX component failure rates; however, EPRI determined that the data, in its current form, was not adequate to develop accurate component failure rates. Last month they turned over the task to the PWR and BWR owner's groups. The owner's groups have the action to develop the controls necessary to accurately gather the information for developing



failure rates. The EPRI person that I spoke to did not have a timeline for the owner's groups action.

Listed below are the notifications that we have added to the EPRI FLEX database. The criteria we used was component failures (failures to start or failures in operation), and anything we (Salem, Hope Creek, Corporate) felt was worthy of sharing with the remainder of the industry.

Non Responsive

Non Responsive

Peter Koppel  
X2835

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**From:** Hawkins, Justin  
**Sent:** Thursday, June 14, 2018 4:29 AM  
**To:** Timberman, Tanya J; MacEwen, Thomas T.; Koppel, Peter J.  
**Cc:** Haney, Sherlyn  
**Subject:** Follow-up to FLEX meeting from yesterday

Tanya,

I spoke to Frank Arner (Regional SRA – Senior Risk Analyst) about his concerns regarding FLEX equipment failure reporting. Based on this conversation, I would like to see the information that is submitted to the industry (December 2017 and June 2018) and the criteria for submittal.

Thanks,

Justin Hawkins  
HC SRI  
X1078

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**From:** [Murray, Robert](#)  
**To:** [Phillips, Charles](#)  
**Subject:** SIT Input  
**Date:** Thursday, July 12, 2018 1:11:00 PM  
**Attachments:** [SIT Input.docx](#)  
[image001.png](#)

---

See attached.

Rob Murray  
Quad Cities Senior Resident Inspector  
Office (309)654-2227  
Cell

(b)(6)



5. Understand whether there were any deficiencies in operator training (both licensed and nonlicensed operators) which contributed to the EDG unavailability and the failure to identify the condition across multiple operating shifts.

(b)(5)



7. Evaluate licensee planned and completed corrective actions following the EDG event to the extent possible and assess if prior opportunities (e.g., surveillances, maintenance, and self or nuclear oversight assessments) existed to have identified the problem at an earlier point in time.

(b)(5)



(b)(5)

(b)(5)

**From:** [Stoedter, Karla](#)  
**To:** [Louden, Patrick](#); [Skokowski, Richard](#); [Lambert, Kenneth](#)  
**Cc:** [Phillips, Charles](#); [Sargis, Daniel](#)  
**Subject:** Clinton EDG Unavailability IFRB  
**Date:** Monday, July 16, 2018 1:27:00 PM  
**Attachments:** [Clinton EDG Unavailability IFRB .docm](#)

---

Pat and Rick,

Here is the Clinton IFRB worksheet for Thursday. My understanding is the IFRB will be Thursday immediately following the enforcement panel. If you understand differently, please let me know.

Karla

EXHIBIT 1 – IFRB FINDING FORM

<u>IFRB Cover Sheet</u>	
Facility Name/Location: Clinton	Name of Utility or Licensee: Exelon
Docket Number(s): 50-461	EA Number: EA-Click here to enter text.
<div style="border: 1px solid black; height: 500px; width: 100%;"></div> <div style="text-align: right; position: absolute; top: 0; right: 0;">(b)(5)</div>	

Issue Date: (b)(5)

Exh1-1

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Issue Date:

(b)(5)

Exh1-2

0609.05TP

(b)(5)



Issue Date: 

Exh1-3

0609.05TP

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Issue Date: (b)(5)

Exh1-4

0609.05TP

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Issue Date: (b)(5)

Exh1-5

0609.05TP

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Exh1-6

0609.05TP

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Issue Date:

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Exh1-7

0609.05TP

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Issue Date:

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Exh1-8

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Issue Date: (b)(5)

Exh1-9

0609.05TP



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Issue Date:

(b)(5)

Exh1-10

0609.05TP

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Issue Date: (b)(5)

Exh1-11

0609.05TP

(b)(5)

Issue Date: (b)(5)

Exh1-12

0609.05TP

Issue Date: (b)(5)

Att1-1

0609.05TP

**From:** [Mitman, Jeffrey](#)  
**To:** [Kozak, Laura](#)  
**Cc:** [Montecalvo, Michael](#); [Fong, C.J](#); [Zoulis, Antonios](#)  
**Subject:** RE: Comments on IFRB package?  
**Date:** Monday, July 16, 2018 11:01:39 AM  
**Attachments:** [Clinton EDG Unavailability IFRB itm.docm](#)

---

Laura, attached is a marked up version of the draft package. With the exception of the spelling error of my name, all other comments are simply for clarity. If you choose to not use them, that is okay with me.

I've been having problems saving the changes to this document. Hopefully, I've resolved the issue. Let me know if it gives you problems.

Jeff Mitman

---

**From:** Kozak, Laura  
**Sent:** Monday, July 16, 2018 9:06 AM  
**To:** Mitman, Jeffrey <Jeffrey.Mitman@nrc.gov>  
**Subject:** Comments on IFRB package?

We need to get the package in today, so if you could give me any comments by noon.

Thanks  
Laura

EXHIBIT 1 – IFRB FINDING FORM

IFRB Cover Sheet	
Facility Name/Location: Clinton	Name of Utility or Licensee: Exelon
Docket Number(s): 50-461	EA Number: EA-Click here to enter text.
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Exh1-3

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Issue Date: (b)(5)

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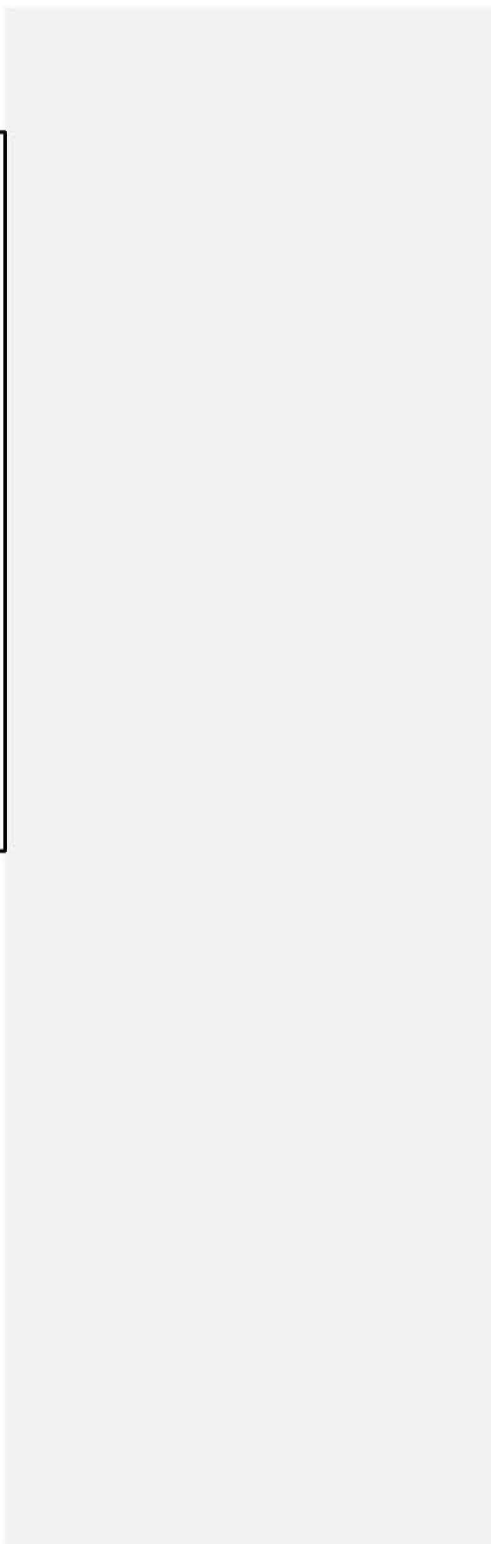


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Issue Date: (b)(5)

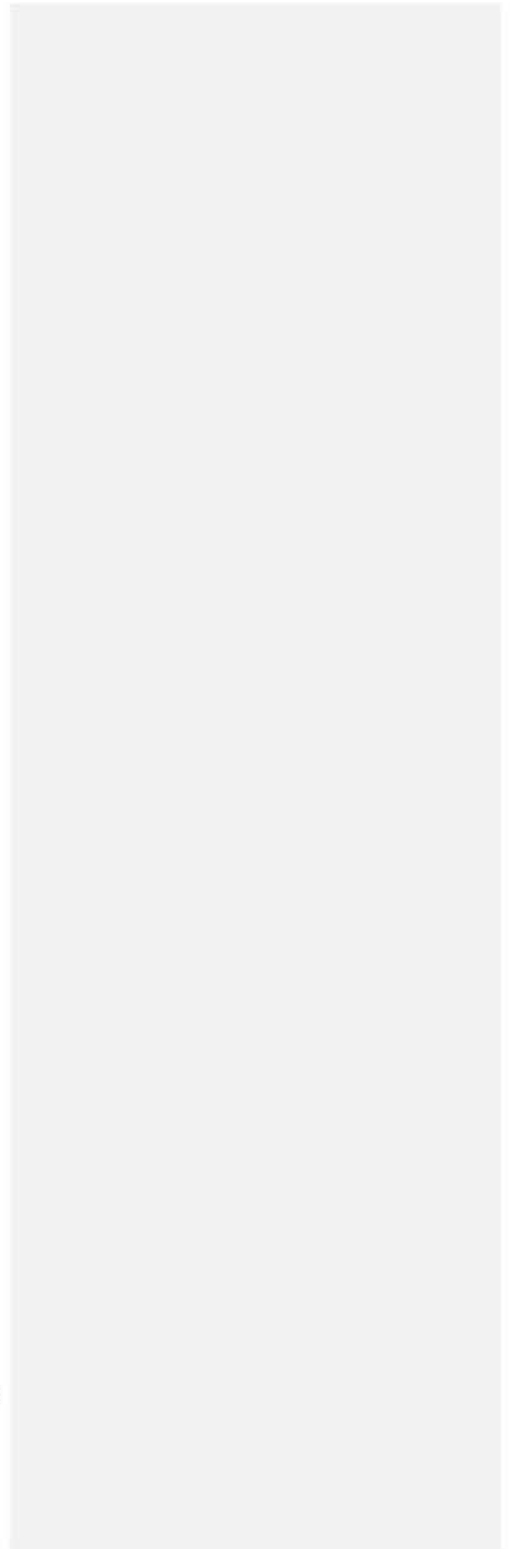
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0609.05TP

Issue Date: (b)(5)

Att1-1

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**From:** [Mitman, Jeffrey](#)  
**To:** [Kozak, Laura](#)  
**Cc:** [Montecalvo, Michael](#)  
**Subject:** Clinton EDG Unavailability IFRB jtm2.docm  
**Date:** Thursday, July 19, 2018 11:48:17 AM  
**Attachments:** [Clinton EDG Unavailability IFRB itm2.docm](#)

---

Laura, here are my suggested changes.

Jeff Mitman

EXHIBIT 1 – IFRB FINDING FORM

<u>IFRB Cover Sheet</u>	
<b>Facility Name/Location:</b> Clinton	<b>Name of Utility or Licensee:</b> Exelon
<b>Docket Number(s):</b> 50-461	<b>EA Number:</b> EA-Click here to enter text.
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Issue Date: (b)(5)

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Issue Date: (b)(5)

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Issue Date: 

Exh1-3

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Issue Date: 

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Issue Date: (b)(5)

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Issue Date: (b)(5)

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(b)(5)

Issue Date:

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Exh1-13

0609.05TP

Issue Date: (b)(5)

Att1-1

0609.05TP

**From:** [Mitman, Jeffrey](#)  
**To:** [Fong, CJ](#)  
**Cc:** [Montecalvo, Michael](#); [Franovich, Mike](#); [Felts, Russell](#); [Kozak, Laura](#); [Circle, Jeff](#); [Helton, Donald](#); [Casey, Lauren](#)  
**Subject:** DECISION REQUIRED: Clinton IFRB Results and Next Actions  
**Date:** Thursday, July 19, 2018 2:03:10 PM  
**Attachments:** [Clinton SDP Plan 07-19-18.pdf](#)

---

CJ,

We completed the Clinton EDG unavailability IFRB today. The IFRB agreed that there is a performance deficiency and directed APHB to continue work on the detail risk evaluation (SDP).

I've committed to complete the DRE by August 29<sup>th</sup>. This will allow sufficient time to complete the required reviews and other process requirements needed to meet the SDP clock due date of ~11/10/18. This is a very tight timeline. It assumes that the DRE shows a greater than 1E-6 CDF. It is expected that the inspection will be re-exited. If this re-exit occurs, then the SDP clock will reset. However, any additional time made available by the clock reset will be used to perform the other required tasks, i.e., not the DRE.

Region III plans to conduct a Planning SERP with HQ next Thursday (August 26<sup>th</sup>). A planning SERP is required because HQ has the lead on the DRE instead of Region III.

An updated copy of my schedule is attached.

Do you want me to schedule a briefing with DRA management in preparation for the Planning SERP?

Jeff Mitman

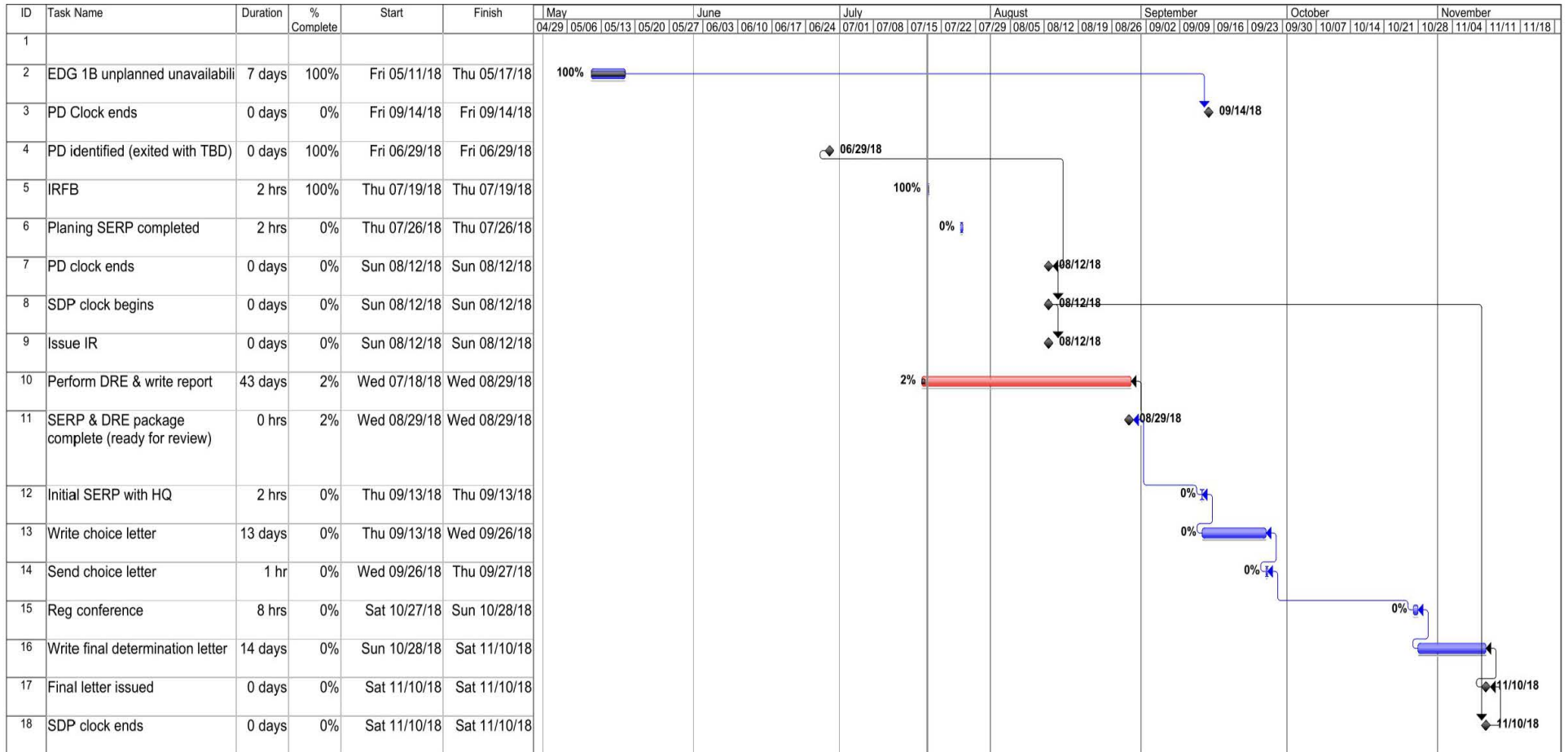


EXHIBIT 1 – IFRB FINDING FORM

<u>IFRB Cover Sheet</u>	
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<b>Docket Number(s):</b> 50-461	<b>EA Number:</b> EA-08-104
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Exh1-3

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EXHIBIT 1 – IFRB FINDING FORM

<u>IFRB Cover Sheet</u>	
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Docket Number(s): 50-461	EA Number: EA-Click here to enter text.
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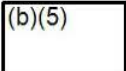
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Exh1-5

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Issue Date:

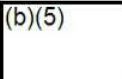
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Issue Date:

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Exh1-8

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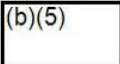
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0609.05TP

(b)(5)

Issue Date: (b)(5)

Exh1-12

0609.05TP

Issue Date: (b)(5)

Att1-1

0609.05TP

**From:** [Louden, Patrick](#)  
**To:** [Murray, Robert](#)  
**Cc:** [Lara, Julio](#); [Stoedter, Karla](#); [Riemer, Kenneth](#); [Phillips, Charles](#); [Draper, Jason](#); [Sanchez Santiago, Elba](#); [Sargis, Daniel](#); [Kozak, Laura](#); [Stone, AnnMarie](#)  
**Subject:** RE: Clinton SIT Discussion - Licensee Identified  
**Date:** Monday, July 02, 2018 3:07:11 PM

---

Thanks for sharing this Rob.

Once Karla is back I would like to have a team discussion on this topic.

Pat

---

**From:** Murray, Robert  
**Sent:** Monday, July 02, 2018 1:09 PM  
**To:** Louden, Patrick <Patrick.Louden@nrc.gov>  
**Cc:** Lara, Julio <Julio.Lara@nrc.gov>; Stoedter, Karla <Karla.Stoedter@nrc.gov>; Riemer, Kenneth <Kenneth.Riemer@nrc.gov>; Phillips, Charles <Charles.Phillips@nrc.gov>; Draper, Jason <Jason.Draper@nrc.gov>; Sanchez Santiago, Elba <Elba.SanchezSantiago@nrc.gov>; Sargis, Daniel <Daniel.Sargis@nrc.gov>; Kozak, Laura <Laura.Kozak@nrc.gov>; Stone, AnnMarie <AnnMarie.Stone@nrc.gov>  
**Subject:** Clinton SIT Discussion - Licensee Identified

Pat/ All-

During the SIT exit last week, the licensee had asked about credit for some of the findings that we exited. I wanted to share some of my thoughts on the discussion as we are considering the licensee's feedback.

Consider the following definitions and discussion related to credit for identification.

Definitions from 0612:

03.05 Licensee-Identified. Licensee-identified findings and violations are **(1) identified as a result of deliberate observation by licensee personnel**; and (2) entered into the licensee corrective action program. **Examples of deliberate observations that result in licensee-identified findings or violations include** (1) those identified during activities such as post maintenance testing, **operator rounds**, engineering walkdowns, drills, critiques, or audits; and (2) degraded conditions identified during testing which do not result in test failure.

03.09 NRC-Identified. NRC-identified findings or violations are found by NRC inspectors, of which the licensee was not previously aware or had not been previously documented in the licensee's corrective action program. NRC-identified findings or violations **also include issues initially identified by the licensee to which the inspector has identified inadequacies in the licensee's characterization or evaluation of the issue of concern.**

03.17 Self-Revealed. Self-revealed findings or violations are those identified as a result of a condition that (1) become apparent through a readily detectable degradation in material condition, capability, or functionality of equipment or plant operations; and **(2) does not**

**meet the definition of licensee-identified or NRC-identified.** Examples of self-revealed findings or violations include those revealed through: unplanned reactor trips and secondary plant transients; obvious equipment and piping failures; failed on demand testing; valid plant or electronic dosimeter alarms; identification of large quantities of fluids in areas where one would not normally expect such a condition.

From IMC 0612, Appendix B

Block 5 **Is the finding licensee-identified?** In determining whether a finding is licensee-identified, NRC-identified, or self-revealing, **a measure of subjectivity is anticipated and accepted.** To make these determinations, **inspectors and regional staff should consider not only the definitions of these terms, but also past experience, related precedents, and the over-arching regulatory message that the determination could send.**

(b)(5)

Sincerely,

Rob

**From:** [Kozak, Laura](#)  
**To:** ["Joe Edom"](#)  
**Subject:** RE: Clinton Training Material  
**Date:** Friday, July 20, 2018 8:09:00 AM

---

Got it. Thank you.

---

**From:** Joe Edom [mailto:JEdom@jensenhughes.com]  
**Sent:** Friday, July 20, 2018 7:45 AM  
**To:** Kozak, Laura <Laura.Kozak@nrc.gov>  
**Subject:** [External\_Sender] Clinton Training Material

Laura,

This is the big file we discussed.

---

Non Responsive



From: [Mitman, Jeffrey](#)  
To: [Kozak, Laura](#)  
Cc: [Montcalvo, Michael](#)  
Subject: Clinton - DRE Questions (1)  
Date: Tuesday, July 24, 2018 5:27:58 PM  
Attachments: [image001.png](#)  
[image002.png](#)

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Laura, so begin the questions.

Below is a sketch of the containment. It shows two airlocks. One at elevation 737 foot and the other at 828 foot. I know that we discussed airlock and containment status during the SIT but I don't remember Exelon's response. So ...

1. Are there any other airlocks besides those at 737 and 828?
2. What was the status of the primary containment airlocks during the entire time of the unavailability of the Div. 2 EDG?
3. Where there any other openings in containment that would prevent containment pressurization upon loss of SDC and subsequent steaming into primary containment during the entire period of Div. 2 EDG unavailability?
4. Exelon supplied a containment closure procedure. If penetrations were open, is there any reason why primary containment could not or would not be closed during any period of Div. 2 EDG unavailability?
5. Base HEP analysis assumes appropriate instrumentation is available. Of most importance is RPV level. Below is a sketch of Clinton's level ranges. The two ranges that appear to be calibrated for the conditions of interest are the shutdown and fuel zone instruments. What level instruments were available during the period of Div. 2 EDG unavailability?

By the way, I ran the Grand Gulf shutdown model with the HPCS pump, Div. 1 and 2 EDGs failed during a late cold shutdown period. The CDF was  $\sim 3\text{E-}6$  for a three day exposure period. GG has three diesel fire pumps that are risk significant during this configuration. The fire water fault tree failure probability was  $4\text{E-}3$ , (99% from the HEP). The model has no credit for FLEX or Div. 3 to Div. 1 or 2 crosstie. Recovery times for EDGs and offsite power are based on 18 hours.

Jeff Mitman

Non Responsive

**From:** [Kozak, Laura](#)  
**To:** [Stoedter, Karla](#); [Riemer, Kenneth](#); [Louden, Patrick](#)  
**Cc:** [Lara, Julio](#); [Hanna, John](#)  
**Subject:** Clinton planning SERP  
**Date:** Wednesday, July 25, 2018 11:54:30 AM  
**Attachments:** [Clinton Inop Both EDGs SD 072018 \(3\).pptx](#)

---

FYI. NRR/DRA will be briefing NRR management this afternoon in preparation for the planning SERP. Attached is the presentation they are using. We anticipate agreement tomorrow with the plan to go forward with HQ in the lead for the DRE and committing to completing the DRE by the end of August.

The presentation has a schedule for resolving the issue that is very draft. I cautioned NRR that right now we need to focus on the re-exit, issuing the report, completing the DRE and conducting a SERP if necessary by the dates we have committed to.

If you have any questions, let me know.

Laura

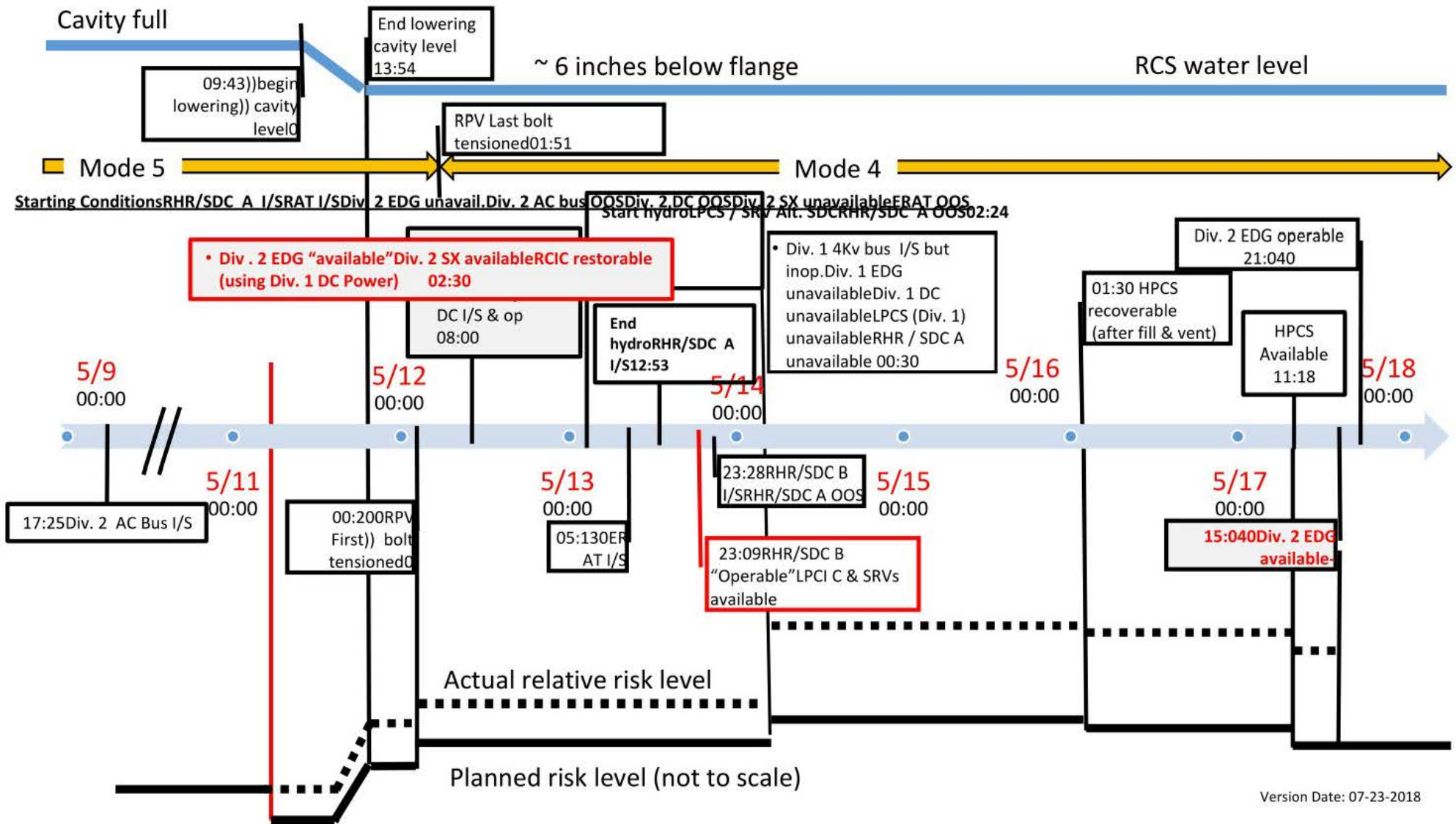
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Note to requester: This page was provided in full in a previous release.



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(b)(5)

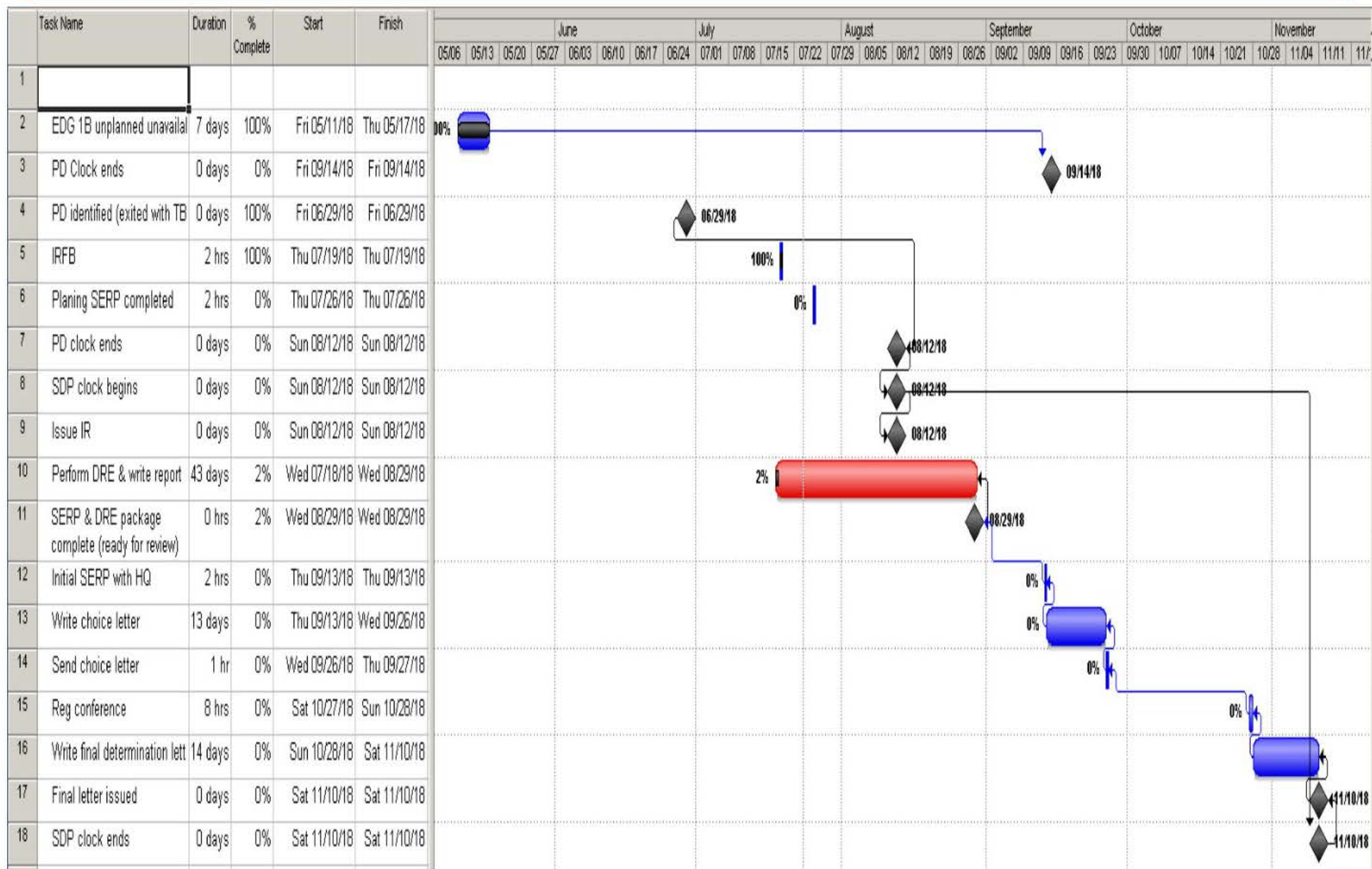
(b)(5)



(b)(5)

(b)(5)

(b)(5)



Note to requester: This page was provided in full in previous releases.

**From:** [Mitman, Jeffrey](#)  
**To:** [Kozak, Laura](#)  
**Subject:** FW: Clinton SDP Planning SERP Pre-Brief Presentation  
**Date:** Wednesday, July 25, 2018 11:38:15 AM  
**Attachments:** [Clinton Inop Both EDGs SD 072018 \(3\).pptx](#)  
**Importance:** High

---

Always helps if I add your name to the email.

This version incorporates Mike Montecalvo's edits.

Jeff Mitman

---

**From:** Mitman, Jeffrey  
**Sent:** Tuesday, July 24, 2018 3:56 PM  
**To:** Montecalvo, Michael <Michael.Montecalvo@nrc.gov>  
**Subject:** Clinton SDP Planning SERP Pre-Brief Presentation

Mike, I've flushed out your start. Please take a look at the enclosed version. What is the current protocol for pre-briefing of planning SERPs, do we invite DIRS and OE?

Laura, we have scheduled a briefing with DRA management on the planning SERP. Enclosed is the draft of what we put together. If you have a chance, comments are always appreciated.

Jeff Mitman

---

**From:** Montecalvo, Michael  
**Sent:** Tuesday, July 24, 2018 12:41 PM  
**To:** Mitman, Jeffrey <[Jeffrey.Mitman@nrc.gov](mailto:Jeffrey.Mitman@nrc.gov)>  
**Subject:** presentation

Jeff,

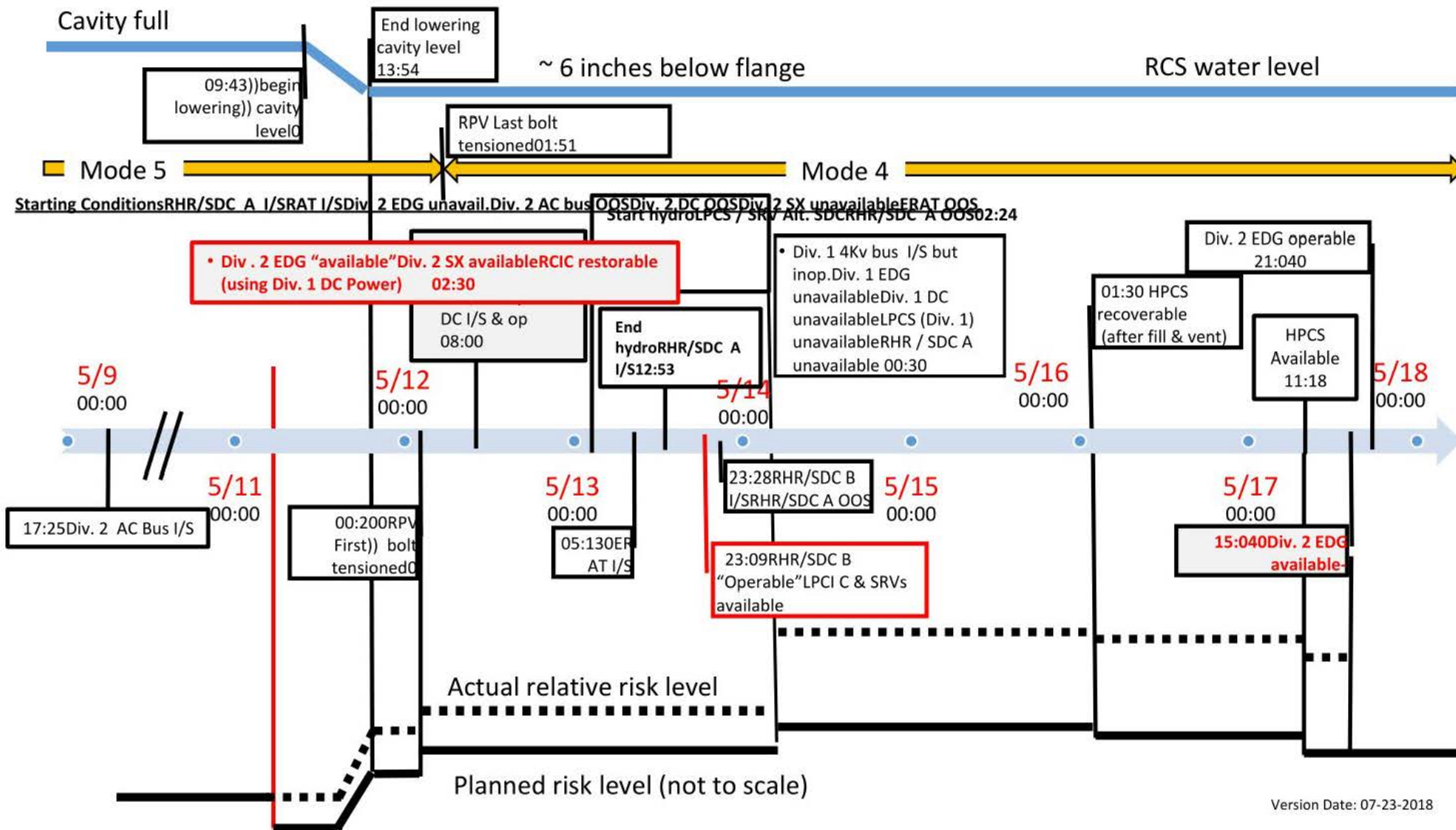
I am working on the presentation for tomorrow's prebrief. Attached is what I have so far (not much) and I will be working on it tonight after all my meetings for the day get complete. I am off on Thursday and Friday, so won't be at the planning SERP. I haven't had much time at all to look at this since picking up BC duties.

Mike

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Note to requester: This page was provided in full in previous releases.





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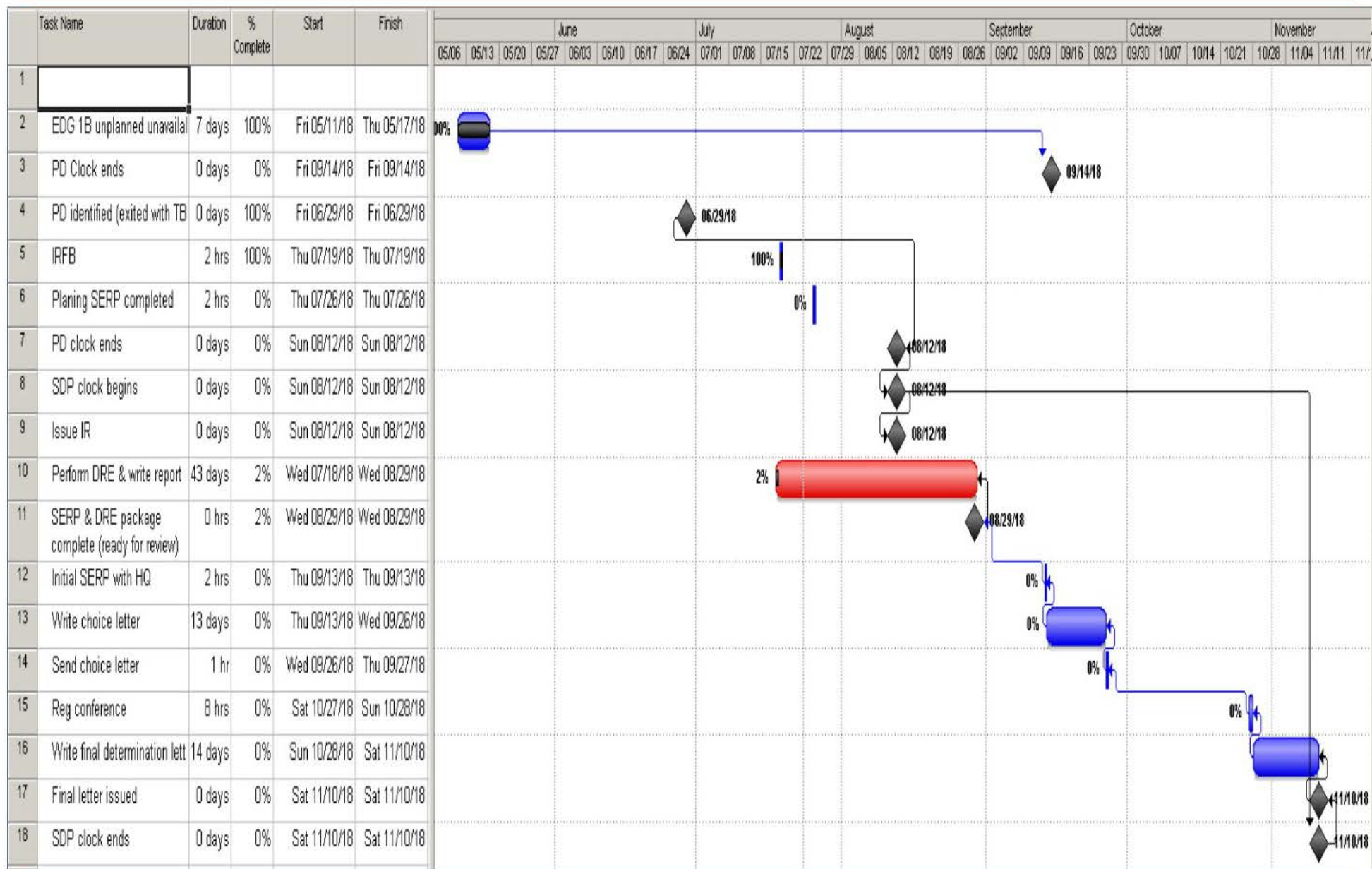
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(b)(5)



Note to requester: This page was provided in full in previous releases.

**From:** [Stoedter, Karla](#)  
**To:** [Phillips, Charles](#); [Sanchez Santiago, Elba](#); [Sargis, Daniel](#)  
**Subject:** Identification Credit Talking Points (002).docx  
**Date:** Wednesday, July 25, 2018 12:30:00 PM  
**Attachments:** [Identification Credit Talking Points \(002\).docx](#)

---

Here's a draft of what I plan to go over with Pat at 1pm. I'll let you know the general feeling I get from him.



**Background:** The Clinton SIT team recently reviewed an issue where the Division 1 and Division 2 EDGs were discovered to be inoperable and unavailable concurrently during the May 2018 refueling outage. The EDG inoperability was found by an individual on operator rounds approximately 6.5 days after the condition occurred.

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IMC 0612, Step 03.05 defines licensee-identified findings/violations as items that are identified as a result of deliberate observation by licensee personnel and are entered into the CAP. Examples of deliberate observations that result in licensee-identified issues include operator rounds.

IMC 0612, Step 03.17 defines self-revealed findings/violations as those identified as a result of a condition that become apparent through a readily detectable degradation in material condition, capability, or functionality of equipment or plant operations; and (2) does not meet the definition of licensee-identified or NRC-identified. Examples include those revealed through: obvious equipment and piping failures; identification of large quantities of fluids in areas where one would not normally expect such a condition, etc.

**Purpose:**

(b)(5)

**Basis Related Information:**

- 

(b)(5)

- Block 5 of IMC 0612, Appendix B, states that a measure of subjectivity is anticipated and accepted when making decisions regarding identification credit. **To make these determinations, inspectors and regional staff should consider not only the definitions of these terms, but also past experience, related precedents, and the over-arching regulatory message that the determination could send.**

- 

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(b)(5)

**From:** [Mitman, Jeffrey](#)  
**To:** [Kozak, Laura](#)  
**Cc:** [Montecalvo, Michael](#)  
**Subject:** RE: Clinton SDP Planning SERP Pre-Brief Presentation  
**Date:** Wednesday, July 25, 2018 1:23:11 PM  
**Attachments:** [Clinton Inop Both EDGs SD 072018 \(3\).pptx](#)

---

Laura, I've made you requested changes. The attached is what I'll use in the pre-briefing.

On a side note, if the re-exit occurs as expected, it would be appreciated if some of the additional time gained could be set aside for the DRE. I know that the Region is squeezed by the constraints imposed by the process, but so is the DRE and this DRE requires building a model not simply pulling it off the shelf and exercising it

Jeff Mitman

---

**From:** Kozak, Laura  
**Sent:** Wednesday, July 25, 2018 12:48 PM  
**To:** Mitman, Jeffrey <[Jeffrey.Mitman@nrc.gov](mailto:Jeffrey.Mitman@nrc.gov)>  
**Subject:** RE: Clinton SDP Planning SERP Pre-Brief Presentation

Two comments –

(b)(5)

On the finding resolution schedule, the date the IR will be issued is going to change because there is likely going to be a re-exit. Also, the dates further out will be set by the region and as you know are subject to change. Can you label the schedule draft and make sure Mike and others know that this will change but the most important point in front of us now is getting the DRE done and conducting a SERP if necessary and exiting and getting the report out?

Thanks  
Laura

---

**From:** Mitman, Jeffrey  
**Sent:** Wednesday, July 25, 2018 11:38 AM  
**To:** Kozak, Laura <[Laura.Kozak@nrc.gov](mailto:Laura.Kozak@nrc.gov)>  
**Subject:** FW: Clinton SDP Planning SERP Pre-Brief Presentation  
**Importance:** High

Always helps if I add your name to the email.

This version incorporates Mike Montecalvo's edits.

Jeff Mitman

---

**From:** Mitman, Jeffrey  
**Sent:** Tuesday, July 24, 2018 3:56 PM  
**To:** Montecalvo, Michael <[Michael.Montecalvo@nrc.gov](mailto:Michael.Montecalvo@nrc.gov)>  
**Subject:** Clinton SDP Planning SERP Pre-Brief Presentation

Mike, I've flushed out your start. Please take a look at the enclosed version. What is the current protocol for pre-briefing of planning SERPs, do we invite DIRS and OE?

Laura, we have scheduled a briefing with DRA management on the planning SERP. Enclosed is the draft of what we put together. If you have a chance, comments are always appreciated.

Jeff Mitman

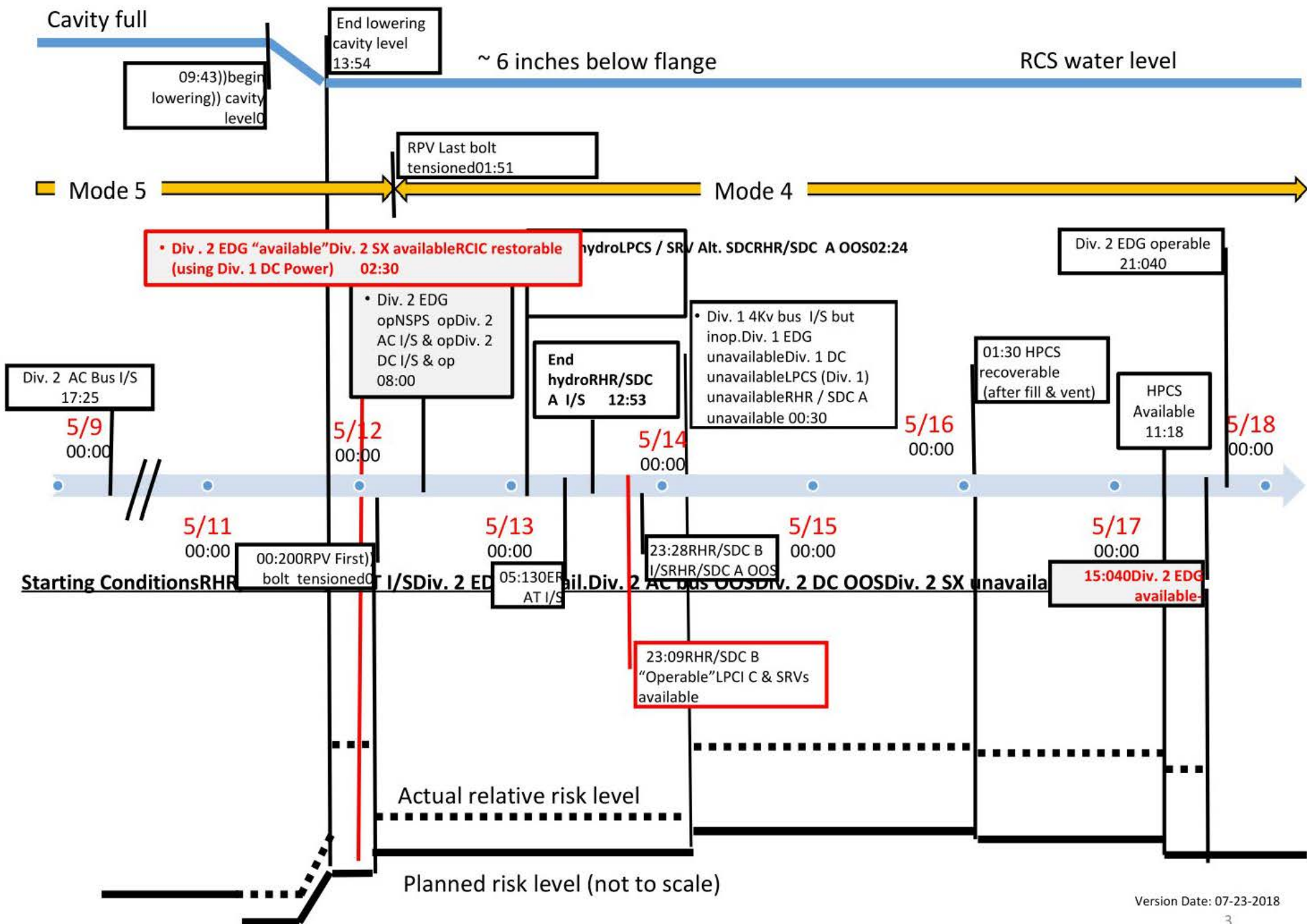
---

**From:** Montecalvo, Michael  
**Sent:** Tuesday, July 24, 2018 12:41 PM  
**To:** Mitman, Jeffrey <[Jeffrey.Mitman@nrc.gov](mailto:Jeffrey.Mitman@nrc.gov)>  
**Subject:** presentation

Jeff,  
I am working on the presentation for tomorrow's prebrief. Attached is what I have so far (not much) and I will be working on it tonight after all my meetings for the day get complete. I am off on Thursday and Friday, so won't be at the planning SERP. I haven't had much time at all to look at this since picking up BC duties.  
Mike

(b)(5)

(b)(5)



(b)(5)

(b)(5)

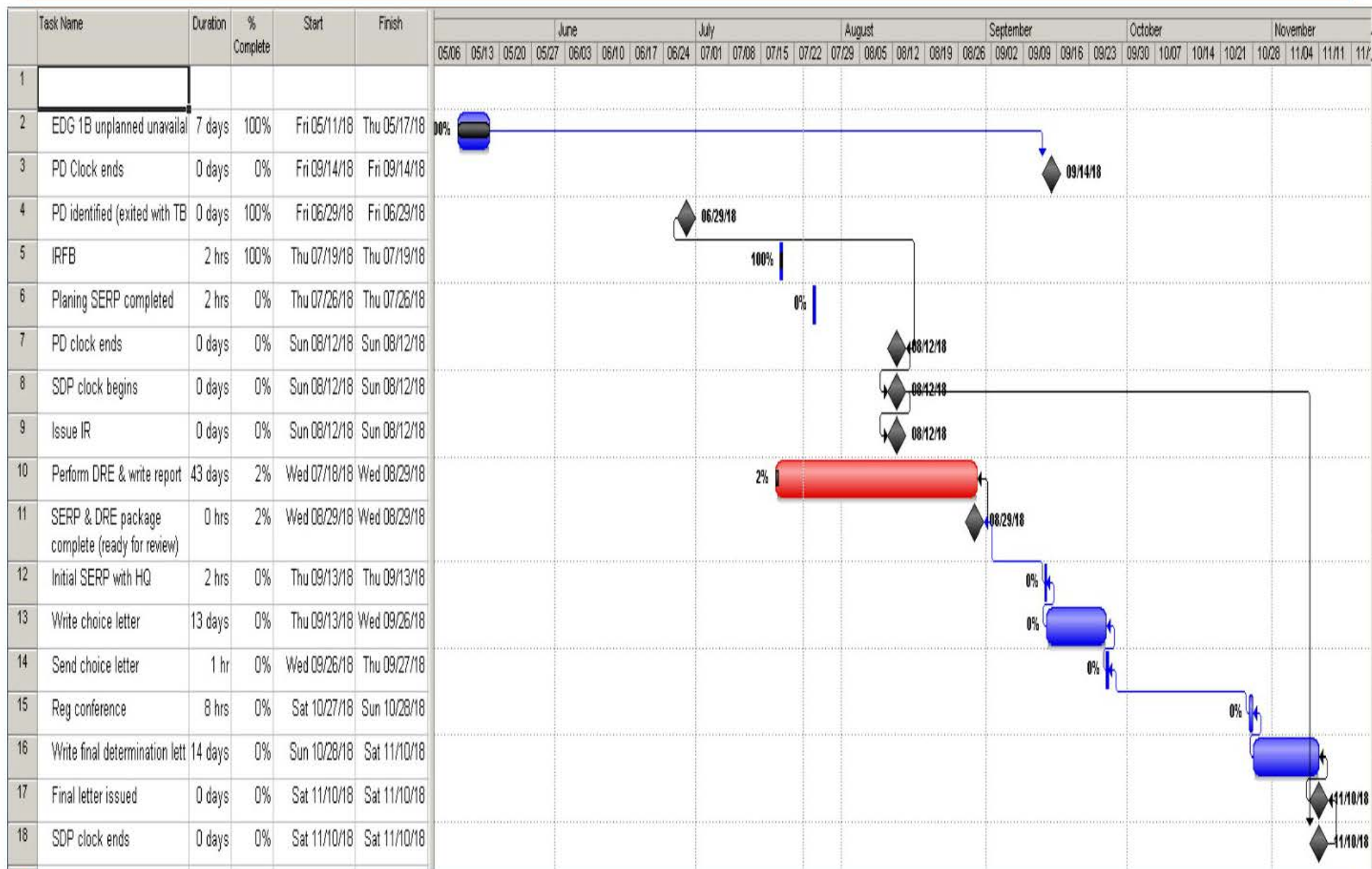


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(b)(5)

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(b)(5)



**From:** [Stoedter, Karla](#)  
**To:** [Sanchez Santiago, Elba](#); [Sargis, Daniel](#); [Louden, Patrick](#)  
**Subject:** Identification Credit Talking Points for Clinton - Revised  
**Date:** Thursday, July 26, 2018 1:43:00 PM  
**Attachments:** [Identification Credit Talking Points \(003\).docx](#)

---

See attached and let me know if you have comments or questions.

## Clinton Identification Credit Talking Points July 2017

**Background:** The Clinton SIT team recently reviewed an issue where the Division 1 and Division 2 EDGs were discovered to be inoperable and unavailable concurrently during the May 2018 refueling outage. The EDG inoperability was found by an individual on operator rounds approximately 6.5 days after the condition occurred.

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IMC 0612, Step 03.05 defines licensee-identified findings/violations as items that are identified as a result of deliberate observation by licensee personnel and are entered into the CAP. Examples of deliberate observations that result in licensee-identified issues include operator rounds.

IMC 0612, Step 03.17 defines self-revealed findings/violations as those identified as a result of a condition that become apparent through a readily detectable degradation in material condition, capability, or functionality of equipment or plant operations; and (2) does not meet the definition of licensee-identified or NRC-identified. Examples include those revealed through: obvious equipment and piping failures; identification of large quantities of fluids in areas where one would not normally expect such a condition, etc.

**Purpose:** (b)(5)

### Basis Related Information:

- 

(b)(5)

- Block 5 of IMC 0612, Appendix B, states that a measure of subjectivity is anticipated and accepted when making decisions regarding identification credit. **To make these determinations, inspectors and regional staff should consider not only the definitions of these terms, but also past experience, related precedents, and the over-arching regulatory message that the determination could send.**

- (b)(5)

-

- (b)(5)



**From:** [Kozak, Laura](#)  
**To:** [Thompson, John](#); [Sigmon, Rebecca](#); [Robles-Alcaraz, Jesse](#)  
**Subject:** IFRB  
**Date:** Thursday, July 26, 2018 9:20:00 AM  
**Attachments:** [Clinton EDG Unavailability planning SERP worksheet.docm](#)  
[Copy of IFRB Status July 13 2018 open and closed.xlsx](#)  
[Palisades 1-1 DG Turbocharger Jacket Water Leak - Initial IFRB.docm](#)

---

Attached is my spreadsheet, updated as of July 18 of all items that have been to an IFRB.

I attached two examples of IFRB forms – a Clinton example and the Palisades example we discussed.

Let me know if you have any additional questions.

Laura

## Inspection Finding Review Board - Issues Under Development

Discovery Date	Plant	Issue	IFRB Date Chair	IFRB Conclusion	Open/Closed/Status
Non Responsive					
(b)(5)					
Non Responsive					
(b)(5)					
Non Responsive					

(b)(5)

Non Responsive

EXHIBIT 1 – IFRB FINDING FORM

<u>IFRB Cover Sheet</u>	
<b>Facility Name/Location:</b> Palisades	<b>Name of Utility or Licensee:</b> Entergy
<b>Docket Number(s):</b> 50-255	<b>EA Number:</b> EA-18-XXX
<div style="border: 1px solid black; height: 600px; width: 100%;"></div> <div style="text-align: right; position: absolute; top: 0; right: 0;">(b)(5)</div>	

Issue Date:  (b)(5)

Exh1-1

0609.05TP

(b)(5)

Issue Date:

(b)(5)

Exh1-2

0609.05TP

(b)(5)

Issue Date: (b)(5)

Exh1-3

0609.05TP

(b)(5)

Issue Date:

(b)(5)

Exh1-4

0609.05TP

(b)(5)

Issue Date:

(b)(5)

Exh1-5

0609.05TP



(b)(5)

Issue Date: (b)(5)

Exh1-6

0609.05TP

(b)(5)

Issue Date:

(b)(5)

Exh1-7

0609.05TP

(b)(5)

Issue Date:

(b)(5)

Exh1-8

0609.05TP

(b)(5)



Issue Date: (b)(5)

Exh1-9

0609.05TP

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Issue Date: (b)(5)

Exh1-10

0609.05TP

(b)(5)

Issue Date: (b)(5)

Exh1-11

0609.05TP

(b)(5)



Issue Date: 

Exh1-12

0609.05TP

(b)(5)

Issue Date:

(b)(5)

Att1-1

0609.05TP



EXHIBIT 1 – IFRB FINDING FORM

<u>IFRB Cover Sheet</u>	
<b>Facility Name/Location:</b> Clinton	<b>Name of Utility or Licensee:</b> Exelon
<b>Docket Number(s):</b> 50-461	<b>EA Number:</b> EA-08-104
<div>(b)(5)</div>	

Issue Date: (b)(5)

Exh1-1

0609.05TP

(b)(5)

Issue Date: (b)(5)

Exh1-2

0609.05TP

(b)(5)

Issue Date:

(b)(5)

Exh1-3

0609.05TP

(b)(5)



Issue Date: 

Exh1-4

0609.05TP

(b)(5)

Issue Date: (b)(5)

Exh1-5

0609.05TP

(b)(5)

Issue Date: (b)(5)

Exh1-6

0609.05TP

(b)(5)

Issue Date:

(b)(5)

Exh1-7

0609.05TP

(b)(5)

Issue Date:

(b)(5)

Exh1-8

0609.05TP



(b)(5)

Issue Date: (b)(5)

Exh1-9

0609.05TP

(b)(5)

Issue Date:

(b)(5)

Exh1-10

0609.05TP

(b)(5)



Issue Date: (b)(5)

Exh1-11

0609.05TP

(b)(5)

Issue Date: (b)(5)

Att1-1

0609.05TP

**From:** [Kozak, Laura](#)  
**To:** [Mitman, Jeffrey](#)  
**Cc:** [Montecalvo, Michael](#)  
**Subject:** RE: RClinton SDP Planning SERP Pre-Brief Results  
**Date:** Thursday, July 26, 2018 7:14:00 AM

---

Thanks for the update.

(b)(5)

A large rectangular black box redacting the content of the email body.

I think Mike has a point that we should consider. I want to read up on the discussion of work processes in the SPAR-H NUREG to see how well it fits.

Laura

---

**From:** Mitman, Jeffrey  
**Sent:** Wednesday, July 25, 2018 2:59 PM  
**To:** Kozak, Laura <Laura.Kozak@nrc.gov>  
**Cc:** Montecalvo, Michael <Michael.Montecalvo@nrc.gov>  
**Subject:** RClinton SDP Planning SERP Pre-Brief Results

Laura, the pre-brief for tomorrow's planning SERP went well. While it was an inquisitive discussion there was no reluctance to move forward with the issue or to have HQ perform the DRE. Nothing points to anything other than a pro forma discussion at the planning SERP.

(b)(5)

A large rectangular black box redacting the content of the email body.

Jeff Mitman

**From:** [Stoedter, Karla](#)  
**To:** [Phillips, Charles](#)  
**Subject:** FW: Identification Credit Talking Points (003).docx  
**Date:** Monday, July 30, 2018 8:39:00 AM  
**Attachments:** [Identification Credit Talking Points \(003\).docx](#)

---

See attached.

---

**From:** Sanchez Santiago, Elba  
**Sent:** Friday, July 27, 2018 6:48 AM  
**To:** Stoedter, Karla <Karla.Stoedter@nrc.gov>  
**Subject:** Identification Credit Talking Points (003).docx  
Karla,  
Attached are my comments on the talking points.  
Thanks,  
Elba

Clinton Identification Credit Talking Points July 2017

**Background:** The Clinton SIT team recently reviewed an issue where the Division 1 and Division 2 EDGs were discovered to be inoperable and unavailable concurrently during the May 2018 refueling outage. The EDG inoperability was found by an individual on operator rounds approximately 6.5 days after the condition occurred.

(b)(5)

IMC 0612, Step 03.05 defines licensee-identified findings/violations as items that are identified as a result of deliberate observation by licensee personnel and are entered into the CAP. Examples of deliberate observations that result in licensee-identified issues include operator rounds.

IMC 0612, Step 03.17 defines self-revealed findings/violations as those identified as a result of a condition that become apparent through a readily detectable degradation in material condition, capability, or functionality of equipment or plant operations; and (2) does not meet the definition of licensee-identified or NRC-identified. Examples include those revealed through: obvious equipment and piping failures; identification of large quantities of fluids in areas where one would not normally expect such a condition, etc.

**Purpose:** (b)(5)

**Basis Related Information:**

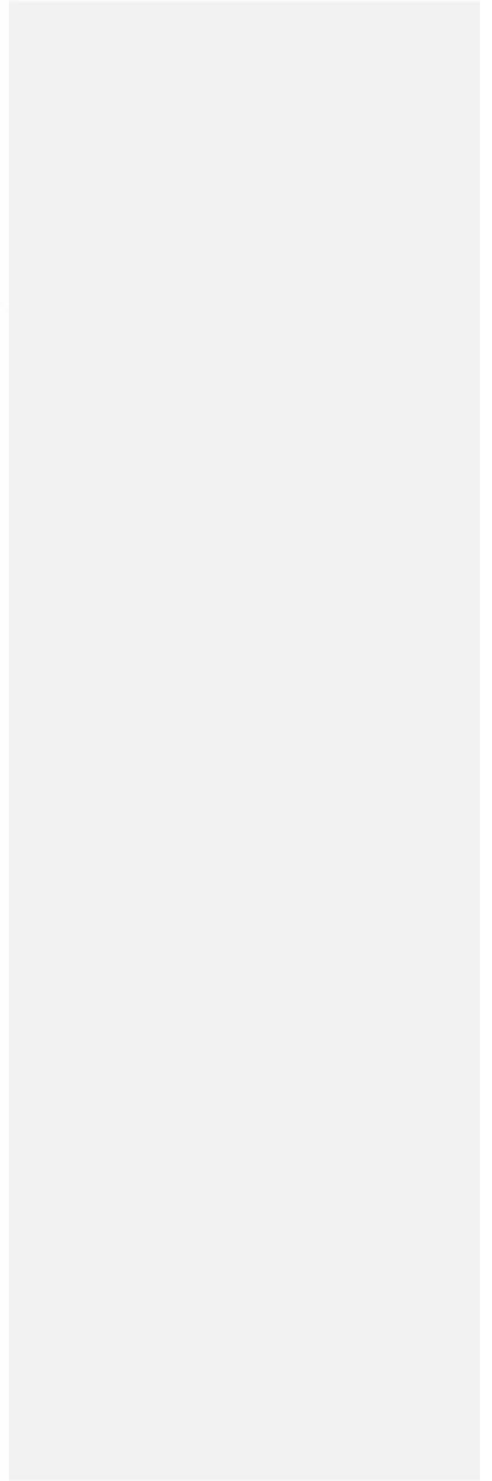
- (b)(5)

- Block 5 of IMC 0612, Appendix B, states that a measure of subjectivity is anticipated and accepted when making decisions regarding identification credit. **To make these determinations, inspectors and regional staff should consider not only the definitions of these terms, but also past experience, related precedents, and the over-arching regulatory message that the determination could send.**

- (b)(5)

(b)(5)

• (b)(5)





**From:** [Kozak, Laura](#)  
**To:** [Mitman, Jeffrey](#)  
**Cc:** [Montecalvo, Michael](#)  
**Subject:** RE: Clinton SDP Planning SERP Pre-Brief Results  
**Date:** Monday, July 30, 2018 9:07:00 AM

---

I reviewed the Work Processes PSF – both the NUREG and the Step by Step Instructions.

I think we should consider applying this PSF to HFEs that are quantified. The finding we

[Redacted]

(b)(5)

Thoughts?

---

**From:** Mitman, Jeffrey  
**Sent:** Thursday, July 26, 2018 12:22 PM  
**To:** Kozak, Laura <Laura.Kozak@nrc.gov>  
**Cc:** Montecalvo, Michael <Michael.Montecalvo@nrc.gov>  
**Subject:** RE: RClinton SDP Planning SERP Pre-Brief Results

(b)(5) I completely agree with you on Appendix M. [Redacted]  
(b)(5) [Redacted]  
(b)(5) [Redacted] We can quantify, therefore we should just take the time to quantify.

As to Mike's point: Don't forget the insights in SPAR-H Step by Step. The discussion on work processes starts on Page 12. A copy is attached.

Jeff Mitman

---

**From:** Kozak, Laura  
**Sent:** Thursday, July 26, 2018 8:15 AM  
**To:** Mitman, Jeffrey <[Jeffrey.Mitman@nrc.gov](mailto:Jeffrey.Mitman@nrc.gov)>  
**Cc:** Montecalvo, Michael <[Michael.Montecalvo@nrc.gov](mailto:Michael.Montecalvo@nrc.gov)>  
**Subject:** RE: RClinton SDP Planning SERP Pre-Brief Results

Thanks for the update.

(b)(5)

[Redacted]

(b)(5)

I think Mike has a point that we should consider. I want to read up on the discussion of work processes in the SPAR-H NUREG to see how well it fits.

Laura

---

**From:** Mitman, Jeffrey

**Sent:** Wednesday, July 25, 2018 2:59 PM

**To:** Kozak, Laura <[Laura.Kozak@nrc.gov](mailto:Laura.Kozak@nrc.gov)>

**Cc:** Montecalvo, Michael <[Michael.Montecalvo@nrc.gov](mailto:Michael.Montecalvo@nrc.gov)>

**Subject:** RClinton SDP Planning SERP Pre-Brief Results

Laura, the pre-brief for tomorrow's planning SERP went well. While it was an inquisitive discussion there was no reluctance to move forward with the issue or to have HQ perform the DRE. Nothing points to anything other than a pro forma discussion at the planning SERP.

(b)(5)

Jeff Mitman

**From:** [Stoedter, Karla](#)  
**To:** [Phillips, Charles](#)  
**Subject:** CLI2018050 SIT draft Rev 1 comments  
**Date:** Tuesday, July 31, 2018 9:20:00 AM  
**Attachments:** [CLI2018050 SIT draft Rev 1 kks.docx](#)

---

See attached. It looks worse than it really is. The file is also on the G drive in the Branch 1/draft reports folder.

K



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**  
REGION III  
2443 WARRENVILLE RD. SUITE 210  
LISLE, ILLINOIS 60532-4352

EA-18-104

Mr. Bryan C. Hanson  
Senior VP, Exelon Generation Company, LLC  
President and CNO, Exelon Nuclear  
4300 Winfield Road  
Warrenville, IL 60555

SUBJECT: CLINTON POWER STATION - NRC SPECIAL INSPECTION REPORT  
05000461/2018050

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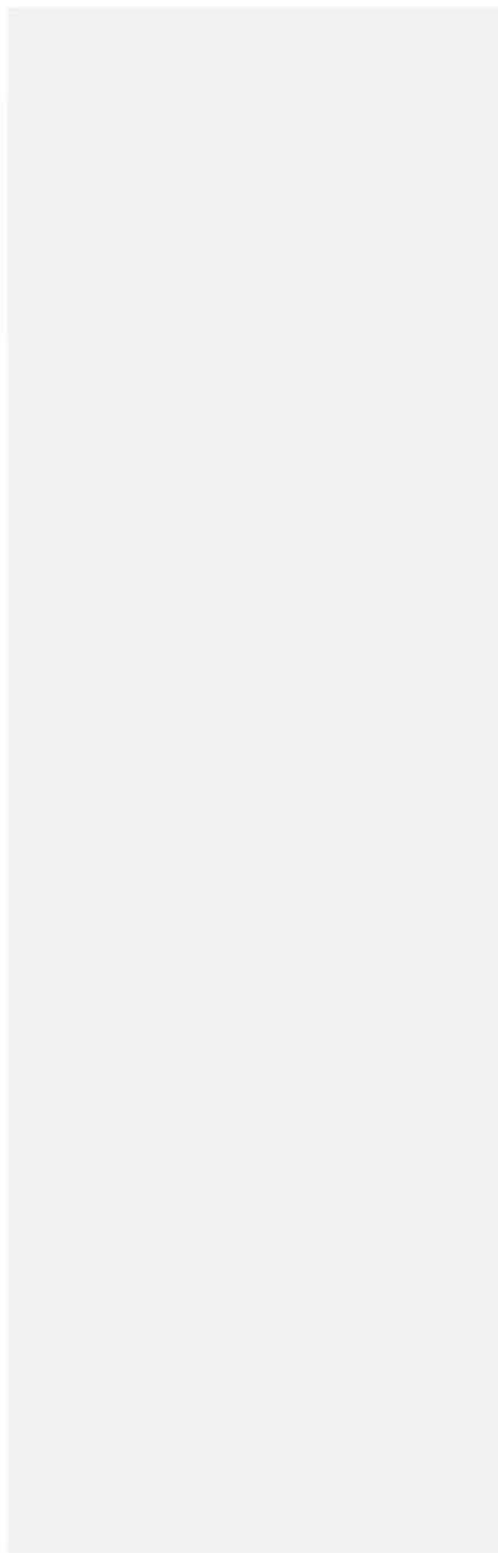
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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION III  
2443 WARRENVILLE ROAD, SUITE 210  
LISLE, ILLINOIS 60532-4352

MEMORANDUM TO: Charles Phillips, Project Engineer  
Division of Reactor Projects, Branch 1

FROM: Patrick L. Loudon, Director */RA/*  
Division of Reactor Projects

SUBJECT: SPECIAL INSPECTION TEAM CHARTER FOR INOPERABILITY  
OF THE CLINTON POWER STATION DIVISION 1 AND  
DIVISION 2 EMERGENCY DIESEL GENERATORS

(b)(5)



(b)(5)



(b)(5)



(b)(5)

Note to requester: The attached .docx file were processed in the final release. The document is not again included here.

**From:** [Phillips, Charles](#)  
**To:** [Skokowski, Richard](#); [Kozak, Laura](#)  
**Cc:** [Stoedter, Karla](#)  
**Subject:** Clinton SIT report draft  
**Date:** Tuesday, July 31, 2018 3:16:57 PM  
**Attachments:** [CLI2018050 SIT draft Rev 1 kks.docx](#)  
[image001.png](#)

---

Rick and Laura,

Karla wanted you two to have a chance to review this before we sent it to final.



*Chuck Phillips*

PE Branch 1, DRP

630-829-9572

[Charles.Phillips@NRC.GOV](mailto:Charles.Phillips@NRC.GOV)

**From:** [Kozak, Laura](#)  
**To:** [Mitman, Jeffrey](#)  
**Subject:** FW: Re-exit Notes for Clinton today  
**Date:** Friday, August 03, 2018 10:37:00 AM  
**Attachments:** [Document2.docx](#)

---

Jeff

Just FYI – Chuck conducted the re-exit meeting today and here are his notes.

Laura

---

**From:** Phillips, Charles  
**Sent:** Friday, August 03, 2018 9:10 AM  
**To:** Sargis, Daniel <Daniel.Sargis@nrc.gov>; Sanchez Santiago, Elba <Elba.SanchezSantiago@nrc.gov>; Murray, Robert <Robert.Murray@nrc.gov>; Draper, Jason <Jason.Draper@nrc.gov>; Stoedter, Karla <Karla.Stoedter@nrc.gov>; Kozak, Laura <Laura.Kozak@nrc.gov>  
**Subject:** Re-exit Notes for Clinton today

Clinton SIT Re-exit Meeting Notes  
August 3, 2018

833-723-8900

(b)(6)

(b)(5)

This is the re-exit for IR 2018-050  
Who's on the Phone?

I plan on only discussing changes to what I exited on June 29<sup>th</sup>.

Section 4 of the Report which discusses the probable causes of the event and contains the PD that is potentially greater than Green the report will be issued as TBD. And the

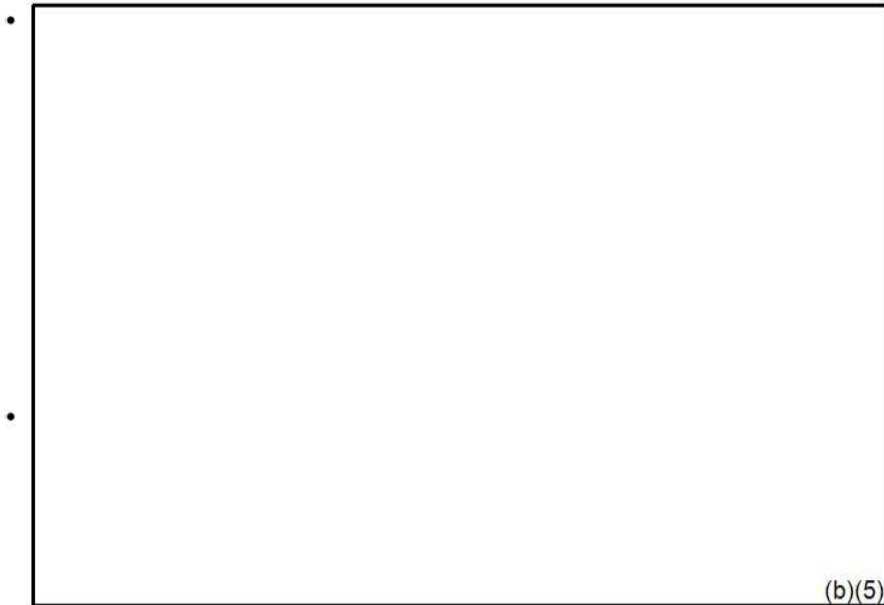
(b)(5)

(b)(5)

Licensee identification credit for this violation will not be given:

- IMC 0612, Step 03.05 defines licensee-identified findings/violations as items that are identified as a result of deliberate observation by licensee personnel and are entered into the CAP. Examples of deliberate observations that result in licensee-identified issues include operator rounds.
- IMC 0612, Step 03.17 defines self-revealed findings/violations as those identified as a result of a condition that become apparent through a readily detectable degradation in material condition, capability, or functionality of equipment or plant operations; and (2) does not meet the definition of licensee-identified or NRC-identified. Examples include those revealed through: obvious equipment and piping failures; identification of large quantities of fluids in areas where one would not normally expect such a condition, etc.
- Block 5 of IMC 0612, Appendix B, states that a measure of subjectivity is anticipated and accepted when making decisions regarding identification credit. **To make these determinations, inspectors and regional staff should consider not only the definitions of these terms, but also past experience, related precedents, and the over-arching regulatory message that the determination could send.**

(b)(5)



In addition we made the following comment in Section 5. The inspectors did not conclude that training deficiencies for equipment operators contributed to this event; however, the inspectors were concerned that equipment operators' standards for thorough tours, attention to detail in the plant, perceived time pressure, and understanding of plant status were contributors to the event.

In Section 8 of the report, which reviewed operating experience, we previously stated that there would be a violation of the license for having the 1CO609 valve in the wrong position for several months. We've changed our position and are calling this a finding. We are giving you identification credit for this finding. In this case the valve position was not easily identifiable. The valve is high in the air, the valve position cannot be discerned from the ground level and the identification of the locked status of the valve is difficult. We feel the identification of the valve in the unlocked position in this case required good observation skills and a questioning attitude. We normally don't document licensee identified findings but because of the nature of the charter we have to.

In addition we made an addition to my exit comments about the corrective actions associated with this issue. Your corrective actions were to put the valve into its correct position and to require each operator to read a daily order, which was effective from September 30 through October 3, 2016, that discussed the requirements for tracking the status of plant equipment. The daily order stated that equipment status could be tracked in one of five approved methods. One of those methods, an example given by the licensee, was an open procedure and that the open procedure must be documented in the control room log. This was essentially what the SRO told the inspectors happened in the case of the Division 2 EDG air receiver isolation valves. The SRO stated he was required to log the out-of-service activity in the control room logs and he believed that CPS 3506.01P002 was the procedure in progress to control equipment status. The inspectors concluded the licensee's response to the internal operating

experience was ineffective and may have actually reinforced the behavior of tracking equipment status using the control room logs.



**From:** [Kozak, Laura](#)  
**To:** [Mitman, Jeffrey](#)  
**Subject:** RE: RE: Questions  
**Date:** Friday, August 03, 2018 4:51:00 PM

---



**From:** Mitman, Jeffrey  
**Sent:** Friday, August 03, 2018 4:43 PM  
**To:** Kozak, Laura <[Laura.Kozak@nrc.gov](mailto:Laura.Kozak@nrc.gov)>  
**Subject:** RE: RE: Questions

Would you let me know how this affects clocks and due dates. I'd like to update my Gantt chart. Thanks.

Jeff Mitman

---

**From:** Kozak, Laura  
**Sent:** Thursday, August 02, 2018 1:38 PM  
**To:** Mitman, Jeffrey <[Jeffrey.Mitman@nrc.gov](mailto:Jeffrey.Mitman@nrc.gov)>  
**Subject:** RE: RE: Questions

Forgot to mention – Chuck planning to re-exit tomorrow with Clinton. The re-exit is because the two green findings were slightly changed. The finding we are dealing with has not changed.

The report is in draft and will likely be issued in the next couple of weeks (my guess). It describes the significance of the issue we are working on from the phase 1 and 2 perspective and calls it TBD because a phase 3 or DRE is ongoing.

Laura

---

**From:** Mitman, Jeffrey  
**Sent:** Thursday, August 02, 2018 10:33 AM  
**To:** Kozak, Laura <[Laura.Kozak@nrc.gov](mailto:Laura.Kozak@nrc.gov)>

**Subject:** RE: RE: Questions

Laura, do you know what Exelon is using Gothic to calculate? I assume it is the TTB and TTCU analysis or it could be some containment calcs.

Thanks.

Jeff Mitman

---

**From:** Kozak, Laura  
**Sent:** Thursday, August 02, 2018 11:24 AM  
**To:** Mitman, Jeffrey <[Jeffrey.Mitman@nrc.gov](mailto:Jeffrey.Mitman@nrc.gov)>  
**Cc:** Montecalvo, Michael <[Michael.Montecalvo@nrc.gov](mailto:Michael.Montecalvo@nrc.gov)>  
**Subject:** FW: RE: Questions

---

**From:** Edom, Joseph T:(Contractor - GenCo-Nuc) [<mailto:Joe.Edom@exeloncorp.com>]  
**Sent:** Thursday, August 02, 2018 10:20 AM  
**To:** Kozak, Laura <[Laura.Kozak@nrc.gov](mailto:Laura.Kozak@nrc.gov)>  
**Cc:** Joe Edom - Jensen Hughes ([JEdom@jensenhughes.com](mailto:JEdom@jensenhughes.com)) <[JEdom@jensenhughes.com](mailto:JEdom@jensenhughes.com)>  
**Subject:** [External\_Sender] RE: Questions

Hi Laura.

Just wanted to update you on the status of the question responses. We are working to get the majority of them to you by the end of the week. I requested the site prepare a written response that we could send you and then set up a call to discuss them. My guess is that question 6 on the reliability will take a little bit longer, probably into next week.

We are also looking to have the GOTHIC analysis signed off by Friday or Monday and the risk assessment that we prepared will follow that sign off.

Does that still meet your needs?

Thank you.

**Joe Edom** | Senior Corporate Risk Management Engineer

**JENSEN HUGHES**

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[JEdom@jensenhughes.com](mailto:JEdom@jensenhughes.com) | [www.jensenhughes.com](http://www.jensenhughes.com)

+++++

Exelon E-mail: [joe.edom@exeloncorp.com](mailto:joe.edom@exeloncorp.com)

(b)(6)

**From:** Kozak, Laura [<mailto:Laura.Kozak@nrc.gov>]

**Sent:** Thursday, July 26, 2018 2:37 PM

**To:** Edom, Joseph T:(Contractor - GenCo-Nuc) <[Joe.Edom@exeloncorp.com](mailto:Joe.Edom@exeloncorp.com)>

**Subject:** [EXTERNAL] Questions

Joe – Here are the questions that I mentioned yesterday. Please give me a call at your convenience to discuss.

Laura

1. Are there any other airlocks besides those at 737 and 828?
2. What was the status of the primary containment airlocks during the entire time of the unavailability of the Div. 2 EDG?
3. Where there any other openings in containment that would prevent containment pressurization upon loss of SDC and subsequent steaming into primary containment during the entire period of Div. 2 EDG unavailability?
4. Exelon supplied a containment closure procedure. If penetrations were open, is there any reason why primary containment could not or would not be closed during any period of Div. 2 EDG unavailability?
5. Base HEP analysis assumes appropriate instrumentation is available. Of most importance is RPV level. The two ranges that appear to be calibrated for the conditions of interest are the shutdown and fuel zone instruments. What level instruments were available during the period of Div. 2 EDG unavailability?
6. Please provide reliability data for FLEX equipment (number of starts, duration of runs, and number of failures to start or run). Please provide failure probabilities derived from the previous data. For equipment failures, please provide the associated condition report.
7. For the simulator exercise related to FLEX, was the Division 3 DG available? The guide indicates the HPCS pump shaft was damaged but is silent on the availability of the DG.
8. Training material for the Division 3 cross-tie includes a 5 minute discussion of the procedure during an EDMG-based simulator exercise and a DBIG training session covering all EDMGs with 2 slides showing the cross-tie procedure and a diagram of the electrical line-up. Does training include required walk-throughs of the procedure in the field?

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**From:** [Stoedter, Karla](#)  
**To:** [Kozak, Laura](#)  
**Subject:** talking points for self revealing vs. licensee identified  
**Date:** Friday, August 03, 2018 8:56:49 AM  
**Attachments:** [Identification Credit Talking Points \(003\).docx](#)

---

Here you go.



## Clinton Identification Credit Talking Points July 2017

**Background:** The Clinton SIT team recently reviewed an issue where the Division 1 and Division 2 EDGs were discovered to be inoperable and unavailable concurrently during the May 2018 refueling outage. The EDG inoperability was found by an individual on operator rounds approximately 6.5 days after the condition occurred.

(b)(5)

IMC 0612, Step 03.05 defines licensee-identified findings/violations as items that are identified as a result of deliberate observation by licensee personnel and are entered into the CAP. Examples of deliberate observations that result in licensee-identified issues include operator rounds.

IMC 0612, Step 03.17 defines self-revealed findings/violations as those identified as a result of a condition that become apparent through a readily detectable degradation in material condition, capability, or functionality of equipment or plant operations; and (2) does not meet the definition of licensee-identified or NRC-identified. Examples include those revealed through: obvious equipment and piping failures; identification of large quantities of fluids in areas where one would not normally expect such a condition, etc.

**Purpose:** (b)(5)

### Basis Related Information:

- (b)(5)

- Block 5 of IMC 0612, Appendix B, states that a measure of subjectivity is anticipated and accepted when making decisions regarding identification credit. **To make these determinations, inspectors and regional staff should consider not only the definitions of these terms, but also past experience, related precedents, and the over-arching regulatory message that the determination could send.**

- (b)(5)
-

• (b)(5)



**From:** [Stoedter, Karla](#)  
**To:** [West, Steven](#)  
**Subject:** FW: talking points for Clinton SIT finding  
**Date:** Wednesday, August 08, 2018 9:28:00 AM  
**Attachments:** [Identification Credit Talking Points \(003\).docx](#)

---

Steve,  
Here are the talking points on the Clinton identification credit issue we discussed this morning. Let me know if you have additional questions.  
Karla

---

**From:** Rutkowski, John  
**Sent:** Wednesday, August 08, 2018 8:02 AM  
**To:** Stoedter, Karla <Karla.Stoedter@nrc.gov>  
**Cc:** Cameron, Jamnes <Jamnes.Cameron@nrc.gov>  
**Subject:** FW: talking points for Clinton SIT finding  
Thanks Karla.  
JER

---

**From:** Stoedter, Karla  
**Sent:** Wednesday, August 08, 2018 7:42 AM  
**To:** Rutkowski, John <[John.Rutkowski@nrc.gov](mailto:John.Rutkowski@nrc.gov)>  
**Subject:** talking points for Clinton SIT finding  
Jack,

(b)(5)

Karla



## Clinton Identification Credit Talking Points July 2017

**Background:** The Clinton SIT team recently reviewed an issue where the Division 1 and Division 2 EDGs were discovered to be inoperable and unavailable concurrently during the May 2018 refueling outage. The EDG inoperability was found by an individual on operator rounds approximately 6.5 days after the condition occurred.

(b)(5)

IMC 0612, Step 03.05 defines licensee-identified findings/violations as items that are identified as a result of deliberate observation by licensee personnel and are entered into the CAP. Examples of deliberate observations that result in licensee-identified issues include operator rounds.

IMC 0612, Step 03.17 defines self-revealed findings/violations as those identified as a result of a condition that become apparent through a readily detectable degradation in material condition, capability, or functionality of equipment or plant operations; and (2) does not meet the definition of licensee-identified or NRC-identified. Examples include those revealed through: obvious equipment and piping failures; identification of large quantities of fluids in areas where one would not normally expect such a condition, etc.

**Purpose:**

(b)(5)

### Basis Related Information:

- 

(b)(5)

- Block 5 of IMC 0612, Appendix B, states that a measure of subjectivity is anticipated and accepted when making decisions regarding identification credit. **To make these determinations, inspectors and regional staff should consider not only the definitions of these terms, but also past experience, related precedents, and the over-arching regulatory message that the determination could send.**

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(b)(5)

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• (b)(5)



**From:** [Kozak, Laura](#)  
**To:** [Mitman, Jeffrey](#); [Montecalvo, Michael](#)  
**Subject:** FW: Responses to Questions 1-5, 7 and 8  
**Date:** Thursday, August 09, 2018 1:22:00 PM  
**Attachments:** [SRA Plan Response to NRC Questions \(8-9-18\).pdf](#)

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I will post these on sharepoint

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**From:** Edom, Joseph T:(Contractor - GenCo-Nuc) [mailto:Joe.Edom@exeloncorp.com]  
**Sent:** Thursday, August 09, 2018 1:16 PM  
**To:** Kozak, Laura <Laura.Kozak@nrc.gov>  
**Subject:** [External\_Sender] Responses to Questions 1-5, 7 and 8

Laura,

Attached are the responses to the questions you asked. I am going through them to gather the procedures and other material referenced in the responses and will be sending those today as well.

**Joe Edom** | Senior Corporate Risk Management Engineer

**JENSEN HUGHES**

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Exelon E-mail: [joe.edom@exeloncorp.com](mailto:joe.edom@exeloncorp.com)

(b)(6)

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**From:** [Helton, Donald](#)  
**To:** [Kozak, Laura](#); [Garmoe, Alex](#); [Mitman, Jeffrey](#)  
**Subject:** ROP metrics w.r.t. Clinton SDP  
**Date:** Thursday, August 09, 2018 12:41:40 PM

Laura / Alex / Jeff:

(b)(5)

Don

THESE ARE UNOFFICIAL VALUES					
		As of IFRB on 7/19	As of Planning SERP	Current	Notes
Inspection- related dates	Event/Condition Report Date	5/17/2018			
	Date Reactive Inspection Need Determined	~5/24/18			Have not confirmed the actual date with the Region
	SIT Entrance Meeting	6/20/2018			
	SIT Inspection Exit Meeting	6/29/2018			
	Re-exit	TBD	TBD	8/3/2018	
	SIT Inspection Report Issued	TBD	TBD	TBD, but e.g., 8/15/2018	
ROP and Traditional Enforcement Metrics	Reactive Inspection Initiation metric [E-2]	Met by 6/20/18 entrance due to lag between discovery of condition on 5/17/18 and when the Region determined that a reactive inspection was required			30 days from the determination a reactive inspection is required
	ROP inspection timeliness metric [E-4]	9/14/2018			120 days from issue identification date
	ROP report issue metric [O-1]	10/31/2018 (est. assuming full E-4 time is used)		9/17/2018	45 days from final exit on the PD
	Enforcement	10/27/2018		12/1/2018	120 days from

	action metric				final exist on the PD
	ROP SDP metric [E-5]	1/29/2019 (est. assuming full E-4 and O-1 time is used)		TBD, but e.g., 11/13/2018	90 days from inspection report issuance
	255-day overall target to complete all activity	1/29/2019			255 days from the discovery of the event/condition
SDP-related Milestones	Initial DRE/SERP Package Ready for Review	8/29/2018	8/29/2018	8/29/2018	
	Initial SERP target	-	9/13/2018	9/13/2018	
	Choice letter issued	-	9/26/2018	9/26/2018	
	Regulatory Conference	-	10/27/2018	10/27/2018	
	Final Determination Letter Issued	-	11/10/2018	11/10/2018	

- - - - -

Don Helton  
Division of Inspection and Regional Support (Rotational)  
Office of Nuclear Reactor Regulation  
US Nuclear Regulatory Commission  
(301) 415-1545

**From:** [Mitman, Jeffrey](#)  
**To:** [Kozak, Laura](#); [Phillips, Charles](#)  
**Subject:** RE: My thoughts on the Clinton licensee analysis.  
**Date:** Friday, August 10, 2018 4:39:23 PM

---

(b)(5)

Jeff Mitman

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**From:** Kozak, Laura  
**Sent:** Friday, August 10, 2018 2:37 PM  
**To:** Phillips, Charles <Charles.Phillips@nrc.gov>  
**Cc:** Mitman, Jeffrey <Jeffrey.Mitman@nrc.gov>  
**Subject:** RE: My thoughts on the Clinton licensee analysis.

Thanks Chuck. I appreciate you looking at the analysis.

(b)(5)

Laura

---

**From:** Phillips, Charles  
**Sent:** Friday, August 10, 2018 1:23 PM  
**To:** Kozak, Laura <[Laura.Kozak@nrc.gov](mailto:Laura.Kozak@nrc.gov)>  
**Subject:** My thoughts on the Clinton licensee analysis.

(b)(5)

Non Responsive

(b)(5)

(b)(5)



(b)(5)

(b)(5)

**From:** [Orlikowski, Robert](#)  
**To:** [Kozak, Laura](#); [Giessner, John](#); [Cameron, Jamnes](#); [Lara, Julio](#); [Hanna, John](#); [Lambert, Kenneth](#)  
**Cc:** [Roberts, Darrell](#)  
**Subject:** RE: Action - today- Final White Clinton  
**Date:** Friday, March 29, 2019 8:04:04 AM

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(b)(5)

Bob

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**From:** Kozak, Laura  
**Sent:** Friday, March 29, 2019 7:26 AM  
**To:** Giessner, John <[John.Giessner@nrc.gov](mailto:John.Giessner@nrc.gov)>; Cameron, Jamnes <[Jamnes.Cameron@nrc.gov](mailto:Jamnes.Cameron@nrc.gov)>; Lara, Julio <[Julio.Lara@nrc.gov](mailto:Julio.Lara@nrc.gov)>; Orlikowski, Robert <[Robert.Orlikowski@nrc.gov](mailto:Robert.Orlikowski@nrc.gov)>; Hanna, John <[John.Hanna@nrc.gov](mailto:John.Hanna@nrc.gov)>; Lambert, Kenneth <[Kenneth.Lambert@nrc.gov](mailto:Kenneth.Lambert@nrc.gov)>  
**Cc:** Roberts, Darrell <[Darrell.Roberts@nrc.gov](mailto:Darrell.Roberts@nrc.gov)>  
**Subject:** RE: Action - today- Final White Clinton

(b)(5)

---

**From:** Giessner, John  
**Sent:** Friday, March 29, 2019 6:49 AM  
**To:** Cameron, Jamnes <[Jamnes.Cameron@nrc.gov](mailto:Jamnes.Cameron@nrc.gov)>; Lara, Julio <[Julio.Lara@nrc.gov](mailto:Julio.Lara@nrc.gov)>; Orlikowski, Robert <[Robert.Orlikowski@nrc.gov](mailto:Robert.Orlikowski@nrc.gov)>; Hanna, John <[John.Hanna@nrc.gov](mailto:John.Hanna@nrc.gov)>; Kozak, Laura <[Laura.Kozak@nrc.gov](mailto:Laura.Kozak@nrc.gov)>; Lambert, Kenneth <[Kenneth.Lambert@nrc.gov](mailto:Kenneth.Lambert@nrc.gov)>  
**Cc:** Roberts, Darrell <[Darrell.Roberts@nrc.gov](mailto:Darrell.Roberts@nrc.gov)>  
**Subject:** Action - today- Final White Clinton

All,  
Darrell reviewed and signed the letter, I also looked at it. We were very pleased with the level of detail and thoroughness of the evaluation! A couple items to highlight and then one possible change. **Please get back to me by noon**

(b)(5)

Action is in highlight.

Jack

**From:** [Kozak, Laura](#)  
**To:** [Mitman, Jeffrey](#)  
**Subject:** RE: Clinton FLEX Suppression Pool Cooling  
**Date:** Monday, August 13, 2018 9:26:00 AM

---

It looks like the valve is opened in step 4.2.4

Yes, I confirm that the panels are indeed load shed and the steps in 4.1.12 will have no impact. Unless, they back out of load shedding. If they back out of load shedding (just go turn the power back on), and they have not adjusted the containment spray initiation logic, it looks like there would be an impact to FLEX suppression pool cooling.

---

**From:** Mitman, Jeffrey  
**Sent:** Friday, August 10, 2018 5:01 PM  
**To:** Kozak, Laura <Laura.Kozak@nrc.gov>  
**Subject:** Clinton FLEX Suppression Pool Cooling

(b)(5)



Thanks.

Jeff Mitman

**From:** [Stoedter, Karla](#)  
**To:** [West, Steven](#)  
**Subject:** RE: talking points for Clinton SIT finding  
**Date:** Monday, August 13, 2018 5:53:00 AM

---

Steve,

(b)(5)

Thanks,  
Karla

---

**From:** West, Steven  
**Sent:** Friday, August 10, 2018 12:16 PM  
**To:** Stoedter, Karla <[Karla.Stoedter@nrc.gov](mailto:Karla.Stoedter@nrc.gov)>  
**Subject:** RE: talking points for Clinton SIT finding

Karla,

(b)(5)

Steve

---

**From:** Stoedter, Karla  
**Sent:** Wednesday, August 08, 2018 9:29 AM  
**To:** West, Steven <[Steven.West@nrc.gov](mailto:Steven.West@nrc.gov)>  
**Subject:** FW: talking points for Clinton SIT finding

Steve,

Here are the talking points on the Clinton identification credit issue we discussed this morning. Let me know if you have additional questions.

Karla

---

**From:** Rutkowski, John  
**Sent:** Wednesday, August 08, 2018 8:02 AM  
**To:** Stoedter, Karla <[Karla.Stoedter@nrc.gov](mailto:Karla.Stoedter@nrc.gov)>  
**Cc:** Cameron, Jamnes <[Jamnes.Cameron@nrc.gov](mailto:Jamnes.Cameron@nrc.gov)>  
**Subject:** FW: talking points for Clinton SIT finding

Thanks Karla.

JER

---

**From:** Stoedter, Karla

**Sent:** Wednesday, August 08, 2018 7:42 AM

**To:** Rutkowski, John <[John.Rutkowski@nrc.gov](mailto:John.Rutkowski@nrc.gov)>

**Subject:** talking points for Clinton SIT finding

Jack,

[Redacted content] (b)(5)

Karla

**From:** [Mitman, Jeffrey](#)  
**To:** [Kozak, Laura](#)  
**Subject:** Containment Procedures  
**Date:** Tuesday, August 14, 2018 2:31:44 PM

---

Laura, CPS 4006.01 "Loss of Shutdown Cooling," clearly directs plant staff to close secondary containment. (b)(5)

(b)(5)

(b)(5)

Is there any way we can pursue this?

I thought I'd asked for, but cannot find the containment closure procedures. We have CPS 9065.01, but I cannot find: CPS 1401.09 "Control of System and Equipment Status." If you don't have it, can you get it from Exelon?

Thanks.

Jeff Mitman



**From:** [Hunter, Christopher](#)  
**To:** [Kozak, Laura](#)  
**Subject:** RE: Clinton LER 461-2018-002  
**Date:** Wednesday, August 15, 2018 8:57:20 AM

---

Got it. Thanks.

---

**From:** Kozak, Laura  
**Sent:** Wednesday, August 15, 2018 9:56 AM  
**To:** Hunter, Christopher <[Christopher.Hunter@nrc.gov](mailto:Christopher.Hunter@nrc.gov)>  
**Subject:** RE: Clinton LER 461-2018-002

Approved by IFRB and so far no push back from the licensee. Report is going out soon with PD and risk considered to be TBD

---

**From:** Hunter, Christopher  
**Sent:** Wednesday, August 15, 2018 8:54 AM  
**To:** Kozak, Laura <[Laura.Kozak@nrc.gov](mailto:Laura.Kozak@nrc.gov)>  
**Subject:** RE: Clinton LER 461-2018-002

Thanks Laura. Is the PD definite?

---

**From:** Kozak, Laura  
**Sent:** Wednesday, August 15, 2018 8:50 AM  
**To:** Hunter, Christopher <[Christopher.Hunter@nrc.gov](mailto:Christopher.Hunter@nrc.gov)>  
**Subject:** RE: Clinton LER 461-2018-002

Chris

Yes, we are working it. Jeff Mitman has the lead. Hoping to complete in the next couple of weeks.

(b)(5)

Laura

---

**From:** Hunter, Christopher  
**Sent:** Tuesday, August 14, 2018 1:56 PM  
**To:** Kozak, Laura <[Laura.Kozak@nrc.gov](mailto:Laura.Kozak@nrc.gov)>  
**Subject:** Clinton LER 461-2018-002

Laura,

Are you working this issue (<https://www.nrc.gov/docs/ML1819/ML18199A106.pdf>)? I wasn't on my radar yesterday during the SRA call, but I think this was the event you mentioned.

Thanks,  
Chris

**From:** [Kozak, Laura](#)  
**To:** [Stoedter, Karla](#); [Phillips, Charles](#)  
**Cc:** [Sanchez Santiago, Elba](#); [Sargis, Daniel](#)  
**Subject:** Clinton Flex reliability data  
**Date:** Friday, August 17, 2018 11:26:10 AM  
**Attachments:** [Question6\\_Response\\_Final.pdf](#)

---

FYI – I thought you might be interested.

As a part of the SDP and considering FLEX, we need to estimate the reliability of FLEX generators/pumps, etc. In PRA this is modeled as failures to start and failure to run (over the PRA mission time). We requested the actual operating experience from Clinton and received the attached document.

A couple of points:

(b)(5)



Laura

**Question 6:**

Please provide reliability data for FLEX equipment (number of starts, duration of runs, and number of failures to start or run). Please provide failure probabilities derived from the previous data. For equipment failures, please provide the associated condition report.

**Response:**

The reliability data is provided below.

**FLEX Diesel Generators – 1FX01KA and 1FX01KB*****Demands from PM Tasks***

From April 1, 2016 to August 14, 2018, the FLEX Diesel Generators have a combined 14 demands and a total of 8 hours of run time from PM tasks.

One failure was reported during this time as documented in IR 2688011. The Functional Failure determination is provided in the Maintenance Rule section below.

Based on the limited plant specific operational data to date, the following reliability rates are calculated:

FLEX DG FTS: 1 failure / 14 demands = 7.2E-02/demand

FLEX DG FTR: 0.5 failures (assumed) / 8 hrs = 6.3E-02/hour

Using a 24-Hour mission time for the FLEX equipment, consistent with PRA Internal Events assumptions, the resulting failure probability would be:

FLEX DG FTR: 6.3E-02/hour \* 24 hours = 1.5 (NOTE: This term would be capped at 1 as a probability greater than 1 is a nonsensical result.)

This value is inappropriately conservative and is impacted by two attributes:

- There is an assumed 0.5 failures included in the probability development when no actual run failures have occurred.
- There is very little operating data to be used to develop a statistically meaningful probability

**FLEX Pumps – 1FX01PA and 1FX01PB*****Demands from PM Tasks***

From April 1, 2016 to August 14, 2018, the FLEX Pumps have a combined 14 demands and a total of 9 hours of run time from PM tasks.

Two failures occurred during this time.

One failure is documented in IR 2686374 and occurred in June 2016. The condition described in the IR was not associated with a failure but with an extended unavailability associated with a PM task. This is not considered a failure for the PRA model. The Maintenance Rule Functional Failure determination is provided in the Maintenance Rule section below.

The second failure is documented in IR 04163408 and occurred in August 2018. This failure was a failure to start, and would be considered a failure in the PRA model. The Maintenance

Rule Functional Failure determination was not available as of the preparation of this document, but a brief description of the event is provided in the Maintenance Rule section below.

#### *Demands from Other Activities*

The FLEX pumps are also used to support Operator training, when the equipment is operated in order to increase familiarity with the equipment. The following table summarizes the additional operation of the FLEX pumps for training. This provides an additional 8 demands and 20.2 hours of run-time for the FLEX pumps for a total of 22 demands and 29.2 hours of run time.

Date	Demands	Run Hours	Comment
9/4/2015	1		Ops Training used to credit WO 1854794. Run time was not indicated on the PM Task so no credit was taken.
7/10/2015	1	2.2	Ops Training used to credit WO 1828639
6/6/2018	1	3	NLO Training. Equipment Operation per 3862.02. Each run was 3-4 hours. Will use 3 hours for data.
6/13/2018	1	3	NLO Training. Equipment Operation per 3862.02. Each run was 3-4 hours. Will use 3 hours for data.
6/20/2018	1	3	NLO Training. Equipment Operation per 3862.02. Each run was 3-4 hours. Will use 3 hours for data.
6/27/2018	1	3	NLO Training. Equipment Operation per 3862.02. Each run was 3-4 hours. Will use 3 hours for data.
7/6/2018	1	3	NLO Training. Equipment Operation per 3862.02. Each run was 3-4 hours. Will use 3 hours for data.
7/11/2018	1	3	NLO Training. Equipment Operation per 3862.02. Each run was 3-4 hours. Will use 3 hours for data.

No FLEX Pump failures during the Operator training runs have been identified to date.

Based on the limited failure data to date, the following reliability rates are calculated:

FLEX UHS Pump FTS: 1 failure/ 22 demands = 4.5E-02/demand

FLEX UHS Pump FTR: 0.5 failures (assumed) / 29.2 hrs = 1.7E-02/hour

Using a 24-Hour mission time for the FLEX equipment, consistent with PRA Internal Events assumptions, the resulting failure probability would be:

FLEX UHS Pump FTR: 1.7E-02/hour \* 24 hours = 0.41

This value is inappropriately conservative and is impacted by two attributes:

- There is an assumed 0.5 failures included in the probability development when no actual run failures have occurred.
- There is very little operating data to be used to develop a statistically meaningful probability

#### Clinton Internal Events PRA Model

For the development of the FLEX equipment reliability data used in the Clinton Internal Events PRA model, no plant specific data was collected or used. The Clinton Internal Events PRA model of record, CL 117A, uses plant specific data gathered through December 31, 2016. Given that data gathering for Clinton FLEX equipment did not begin until April 2016, there was an insufficient data population on which to base plant-specific probabilities. Therefore, the probabilities are based on NUREG/CR-6928 data (2015), adjusted as described below.

Equipment used as part of the FLEX strategies includes some permanently installed equipment (e.g., SF pumps used for the RPV injection strategy) and some portable equipment (e.g., FLEX pumps used for the SPC strategy). In the baseline risk assessment, the random failure probabilities of permanently installed equipment (e.g., SF pumps) are the same as those associated with other permanently installed components of the same type (i.e., using the equipment type code). For portable equipment, lacking sufficient plant specific data, the random failure probabilities are estimated as double those of similar, permanently installed, components, as identified below:

<b>FLEX Equipment</b>	<b>Mode</b>	<b>Basic Event</b>	<b>Prob</b>	<b>Basis</b>	<b>Comment</b>
FLEX DG 480V	FTS	1FXDGPRIFLEX-A--	1.23E-02	2x EDG FTS	FLEX DGs are smaller and less complex than installed EDGs.
FLEX DG 480V	FTR	1FXDGPRIFLEX-X--	6.15E-02	48hr EDG FTR	FLEX DGs are smaller and less complex than installed EDGs.
FLEX DD Pump	FTS	1FXPD-PRIFLEXA--	6.30E-03	2x DD Pump FTS (like FP pump)	Supports SPC. RPV injection is via installed SF pumps. Failure rates of the SF pumps are not increased.
FLEX DD Pump	FTR	1FXPD-PRIFLEXX--	1.05E-02	48hr DD Pump FTR (like FP pump)	Supports SPC. RPV injection is via installed SF pumps. Failure rates of the SF pumps are not increased.

The FTS and FTR terms were based on the generic data from NUREG/CR-6928 as modified as described in the CL117A MOR Data notebook.

Although the plant-specific data for Clinton's FLEX equipment is sparse, a comparison of the plant-specific reliability rates calculated using that data to the rates used in the Internal Events model is provided in the following table:

<b>FLEX Equipment</b>	<b>Mode</b>	<b>Basic Event</b>	<b>Probability Used in PRA</b>	<b>Probability Based on Plant Data through July 2018</b>	<b>Comment</b>
FLEX DG 480V	FTS	1FXDGPRIFLEX-A--	1.23E-02	7.2E-02	Within a factor of 6.

<b>FLEX Equipment</b>	<b>Mode</b>	<b>Basic Event</b>	<b>Probability Used in PRA</b>	<b>Probability Based on Plant Data through July 2018</b>	<b>Comment</b>
FLEX DG 480V	FTR	1FXDGPRI FLEX-X--	6.15E-02	1.0	The plant data derived probability would exceed 1 which is an indication of the inadequacy of the data collected.
FLEX DD Pump	FTS	1FXPD-PRIFLEXA--	6.30E-03	4.5E-02	Within a factor of 7.
FLEX DD Pump	FTR	1FXPD-PRIFLEXX--	1.05E-02	0.41	Excessively conservative value from sparse plant data

### Maintenance Rule

Clinton elected to create Maintenance Rule functions for the FLEX equipment. These functions were implemented at Clinton in 2015. From the Clinton Maintenance Rule database:

#### FX-01 Function

Function Title - FLEX UHS Water Pump

Description: The FLEX UHS Water Supply pump can be aligned to the DG building manifold to supply water to perform the following functions:

- Division 1 or Division 2 Shutdown Service Water (SX) for Suppression Pool Cooling and Spent Fuel Pool Makeup
- Low Pressure Core Spray (LPCS) or Residual Heat Removal (RHR) train C injection headers for Suppression Pool or Reactor Pressure Vessel (RPV) Makeup.
- Spent Fuel Pool Spray if required.

This Function is Low Safety Significant.

Function Failure Definition:

- A failure is defined as the loss of the capability of any of the FLEX Pumps, Diesel Generators, or associated equipment to be able to provide the FLEX function.

#### FX-02 Function

Function Title - FLEX Elect (FLEX Gen)

Description: FLEX Electrical Support (FLEX Generator) – A FLEX generator can be lined up to the Control Building FLEX Riser through either primary and alternate connections to support electrical distribution to 480 VAC Busses and 125 VDC Distribution for both Division 1 and Division 2 key equipment controls and critical parameter indications.

This Function is Low Safety Significant.

Function Failure Definition:

- A functional failure is a failure of the FLEX diesels or other electrical distribution equipment which would render the entire FLEX electrical strategies unavailable.

#### FX-03 Function (NOT IN MR SCOPE):

Function Title - FLEX Spent FP Instr.

Description: The purpose of this equipment is to address the regulatory requirements set forth under NRC Order EA-12-051 with regard to reliable Spent Fuel Pool (SFP) Instrumentation. The NRC Order has been issued in response to the events that took place at Fukushima Daiichi on March 11, 2011. This function was determined to not be in-scope for the Maintenance Rule and is provided for completeness of the FLEX Maintenance Rule information.

#### Functional Failures

Based on a review of the IRs captured under the FLEX functions, three functional failures were identified, as listed below.

IR Number	IR Subject	Origination Date
2686374	1FX01PA NOT AVAILABLE DUE TO OIL CHANGE ISSUE	6/27/2016
2688011	1FX01KA FLEX GENERATOR FAILED TO START DURING PM	6/30/2016
4163408	1FX01PA FAILED TO START FOR ANNUAL PMS	8/10/2018

For IR 2686374, the functional failure determination is provided below:

- This is a MRFF as during maintenance the condition was created where the pump was not available to perform its FLEX function. Per FX system MRule scoping "A failure is defined as the loss of the capability of any of the FLEX Pumps, Diesel Generators, or associated equipment to be able to provide the FLEX function." this therefore constitutes a MRFF against the FX-01 mechanical train function.

Based on a review of the IR, this issue was a condition where the FLEX pump was being maintained by a vendor. A pump oil change was part of the preventive maintenance being performed. The vendor failed to bring enough replacement oil to refill the pump resulting in additional unavailability of the FLEX pump for an additional day. This is not considered a failure but rather a continuation of the maintenance activity for the purposes of the equipment reliability data collection.

For IR 2688011, the functional failure determination is provided below:

- The battery causing the FLEX diesel to not start is a failure of the FLEX diesel to perform its FLEX function as a part of the electrical train. This constitutes a failure for the Electrical train FLEX function FX-02 where "A functional failure is a failure of the FLEX diesels or other electrical distribution equipment which would render the entire FLEX electrical strategies unavailable."

This would be considered a failure for the PRA model.

For IR 4163408, the functional failure determination has not yet been completed. The following is an assumption regarding this failure:

- The governor control flashing, preventing the FLEX pump from starting, is a failure of the FLEX pump to perform its function. This constitutes a failure for the FLEX pump function FX-01 where "A failure is defined as the loss of the capability of any of the FLEX



Pumps, Diesel Generators, or associated equipment to be able to provide the FLEX function”.

This would be considered a failure for the PRA model.

**From:** [Louden, Patrick](#)  
**To:** [Kozak, Laura](#); [Stoedter, Karla](#); [Lara, Julio](#)  
**Cc:** [Mitman, Jeffrey](#); [Phillips, Charles](#); [Sanchez Santiago, Elba](#)  
**Subject:** RE: Update on Clinton SDP  
**Date:** Monday, August 20, 2018 8:01:01 AM

---

Thanks for the update Laura.

I agree with your perspective on the FLEX stuff. We should more fully discuss how inspectors should consider factoring FLEX observations into the baseline. (BCs and SRAs)

Pat

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**From:** Kozak, Laura  
**Sent:** Friday, August 17, 2018 3:45 PM  
**To:** Stoedter, Karla <Karla.Stoedter@nrc.gov>; Louden, Patrick <Patrick.Louden@nrc.gov>; Lara, Julio <Julio.Lara@nrc.gov>  
**Cc:** Mitman, Jeffrey <Jeffrey.Mitman@nrc.gov>; Phillips, Charles <Charles.Phillips@nrc.gov>; Sanchez Santiago, Elba <Elba.SanchezSantiago@nrc.gov>  
**Subject:** Update on Clinton SDP

FYI

We are actively working on the SDP evaluation for Clinton. No results yet but on track to support the commitment to complete the DRE by the end of August to support a SERP mid-September, if necessary.

We have received the licensee's evaluation, which concludes the finding is of very low risk significance with a delta CDF of approximately E-8/yr. We have also received answers to several questions we asked regarding containment closure, FLEX reliability, and training on FLEX and the Division 3 cross-tie. We plan to discuss the answers to those questions with the licensee next week to get a common understanding.

(b)(5)

**From:** [Mitman, Jeffrey](#)  
**To:** [Kozak, Laura](#)  
**Subject:** RE: Power Supply for Back-up Battery Charger 1DC11E  
**Date:** Thursday, August 23, 2018 4:58:51 PM

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I believe that Mike Antonelli has not had time to review all of the appropriate procedures. The 480V MCC 1E is energized by CPS 4306.01P001, see Step 4.3.1.11.

However, I continue to be confused.

- According to drawing E02-1DC06 the backup battery charger for the Div. 1 125V

(b)(5)

Jeff Mitman

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**From:** Edom, Joseph T:(Contractor - GenCo-Nuc) [mailto:Joe.Edom@exeloncorp.com]  
**Sent:** Thursday, August 23, 2018 1:48 PM  
**To:** Kozak, Laura <Laura.Kozak@nrc.gov>; Mitman, Jeffrey <Jeffrey.Mitman@nrc.gov>  
**Cc:** Joe Edom - Jensen Hughes (JEdom@jensenhughes.com) <JEdom@jensenhughes.com>; Wes Brinsfield (WBrinsfield@jensenhughes.com) <WBrinsfield@jensenhughes.com>; Teagarden, Grant <gteagarden@jensenhughes.com>; Antonelli, Michael K.:(GenCo-Nuc) <Michael.Antonelli@exeloncorp.com>  
**Subject:** [External\_Sender] Power Supply for Back-up Battery Charger 1DC11E

Laura and Jeff,

Based on a review by Mike Antonelli:

- 1DC11E is powered by non-vital power from aux building MCC 1E (Fed from unit sub 1M - 6.9kV 1B side).
- Reviewing 4306.01C001, unit sub 1M or MCC 1E is not directly powered up by FLEX actions. It would take more extensive efforts to try and power these busses up.
- The most likely path would be to power up the associated safety related 480V bus and restore that division's own battery charger.

**Joe Edom** | Senior Corporate Risk Management Engineer

**JENSEN HUGHES**

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**From:** [Kozak, Laura](#)  
**To:** [Mitman, Jeffrey](#)  
**Subject:** Clinton - HRA - Crosstie, FLEX, etc.  
**Date:** Friday, August 24, 2018 8:53:00 AM

---

Jeff,

A few more thoughts on our discussion yesterday about modeling the cross-tie, etc.

(b)(5)



(b)(5)

Laura

**From:** [Mitman, Jeffrey](#)  
**To:** [Kozak, Laura](#)  
**Subject:** Clinton Questions  
**Date:** Sunday, August 26, 2018 5:30:20 PM

---

Laura, I have more questions for Exelon:

(b)(5)



Jeff Mitman

**From:** [Kozak, Laura](#)  
**To:** [Mitman, Jeffrey](#)  
**Subject:** Sent from Snipping Tool  
**Date:** Monday, August 27, 2018 10:44:00 AM  
**Attachments:** [image001.png](#)

---

(b)(5)





**From:** [Kozak, Laura](#)  
**To:** [Mitman, Jeffrey](#)  
**Subject:** Clinton - items for discussion  
**Date:** Tuesday, August 28, 2018 5:16:00 PM  
**Attachments:** [Clinton Shutdown SPAR model comments.docx](#)

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Note to requester: The attachment to this email has been withheld in its entirety under FOIA Ex. B5 (deliberative process privilege).

Jeff

Please see my comments/questions/items for discussion in the attached.

Thanks for all your hard work on this issue.

Laura

(b)(5)

(b)(5)

**From:** [Mitman, Jeffrey](#)  
**To:** [Kozak, Laura](#)  
**Subject:** Clinton Event Tree Structure  
**Date:** Tuesday, August 28, 2018 6:28:38 PM

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(b)(5)



Jeff Mitman

**From:** [Mitman, Jeffrey](#)  
**To:** [Kozak, Laura](#)  
**Subject:** Clinton Model Assumptions.docx  
**Date:** Tuesday, August 28, 2018 7:02:33 PM  
**Attachments:** [Clinton Model Assumptions.docx](#)

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Laura, attached is my working document for explaining the model. It is far from complete but it is a start.

Shortly, I'll upload a new version of the model onto SharePoint.

(b)(5)



Jeff Mitman

# Clinton Shutdown Model Assumptions

- Time to boil (TTB) = 4.1 hours, based on Exelon document CL-SDP-010 Rev. 1
- Time to core uncover (TTCU) = 23.8 hours, based on Exelon document CL-SDP-010 Rev. 1
- Core uncover is the normal at-power surrogate for core damage. During shutdown, core damage is not expected between 1/3 and 1/2 core height which is somewhat after core uncover, therefore, using core uncover as a surrogate for core damage is somewhat conservative.
- Unavailable and non-recoverable equipment due to test and maintenance (T&M):
  - EDG 1A (note 4160v AC bus 1A1 is energized and available as long as offsite power is available – because the associated EDG is unavailable, this bus will de-energize on loss of offsite power)
  - 480v AC bus 1A
  - 480v AC bus A
  - NSPS 120v Power distribution panel bus A
  - 125v DC battery charger 1A (which is feed from aux. building MCC 1A1)
- Assumed available equipment
  - 480v AC aux. building bus 1L
  - 480v AC aux. building bus 1M
  - 480v AC aux. building bus 1D
  - 480v AC aux. building bus 1E (feed to 125v DC battery charger 1F)
  - 125v DC battery charger 1F (feed from 480v AC aux. building bus 1E)
- According to drawing E02-1DC06 (125v DC & uninterruptible power supply systems) the normal feed to 125v DC bus 1A is via battery charger 1A. Per the licensee, this battery charger was not available due to T&M. Per the same drawing, the backup supply to 125v DC bus 1A is from swing battery charger 1DC11E from aux. building 480v MCVC 1E (1AP28E). Per drawing E02-1AP03 (electrical load diagram), the 1DC25E battery charger is on 480v AC aux. building bus 1D (1AP14E), (b)(5)  
(b)(5)
- The at-power Clinton SPAR model has basic event (BE) failure probabilities for many of the valves that need to be manipulated by the FLEX procedures. These BE failure probabilities are based on data which include failure to open or close based on AC or DC power being available to operate the valve. During the ELAP condition, electrical power may or may not be available to operate the valve. (b)(5)  
(b)(5)  
(b)(5) Without electrical power these contributions to the failure probability are not possible. This should lower the valve failure probabilities in the model. However, the valves can still be opened manually by an equipment operator (EO) at the valve operator without electrical power. (b)(5)

(b)(5)

## Model Changes

Event Name	Change	Basis for Change	
ET: SD-M4L-LOOP	Recovery times	Recovery of offsite power changed from 18 hours to 24 hours based on Exelon calc.	
FT: SD-AC-REC-24H	Deleted offsite recovery BE for 18 hours and added BE for 24 hours	Recovery of offsite power changed from 18 hours to 24 hours based on Exelon calc.	
FT: SD-AC-REC-24H	Deleted BE EDG recovery in 18 hours and added BE EDG recovery in 1 hour	Div. 2 EDG can only be recovered in 1 hour. After 1 hour, the ELAP procedure removes DC control power from the EDG after which the EDG is not recoverable.	
FT: FLEX-ELEC	Added FLEX Electrical System	Includes HEP, FLEX DG and FLEX bus failures	
FT: DCP-125V-1A-LT	Modified CLINTON DIVISION I 125 VDC POWER IS UNAVAILABLE	Modified to add FLEX Electrical as a means of powering DC	
FT: DCP-125V-1B-LT	CLINTON DIVISION II 125 VDC POWER IS UNAVAILABLE	Modified to add FLEX Electrical as a means of powering DC	
BE: DCP-BCH-TM-1A	Added: DIVISION I 125VDC BATTERY CHARGER in Test and Maintenance	Initially set to default template ZT-BCH-TM with value of 2E-3, but set to True in change set because it was out for maintenance during window of interest	
FT: SD-SPC-EXT	Modified: Added capability to perform SPC using FLEX	Procedure CPS 4306.01P003	
FT: FSF	Added: FLEX Suppression Pool Cleanup and Transfer	Procedure CPS 4306.01P003	
BE: HCS-XHE-XR-MDP	Added: Operator Fails to Recover HPCS Pump after Maintenance	Assigned failure probability of 90%	

### High level guidance provided by 4306.01P017

Strategy	Support	Core Cooling	Containment	Spent Fuel Pool
1	<ul style="list-style-type: none"> <li>Lineup FLEX generator to Division 1 or 2 480 VAC per 4306.01P001 FLEX Electrical Connections</li> <li>Lineup FLEX pump to restore Div 1 or 2 SX per 4306.01P002 FLEX UHS Water Supply</li> </ul>	<ul style="list-style-type: none"> <li>Run available ECCS waterleg pumps</li> <li>Pressurize and run RCIC</li> <li>Makeup to RPV per 4306.01P004 FLEX Low Pressure RPV Makeup</li> <li>Open an SRV</li> </ul>	<ul style="list-style-type: none"> <li>Set Primary Containment</li> <li>Establish suppression pool cooling per 4306.01P003 FLEX Suppression Pool Cooling.</li> </ul>	Same as Mode 1,2,3 (makeup, ventilate)

### Procedure List

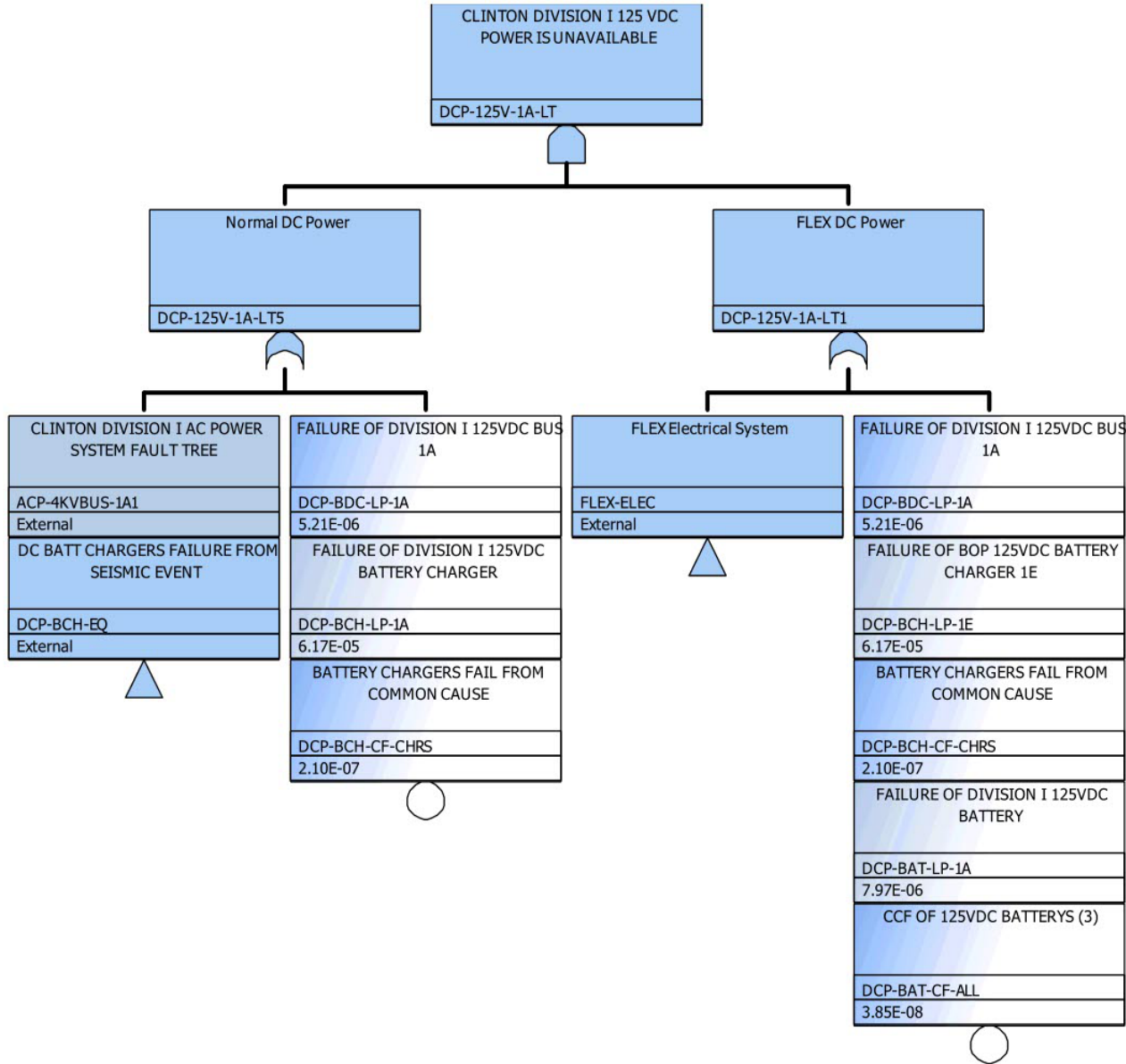
Procedure Number	Title	Current Revision	Revision Controlling during PD	Comments
4006.01	Loss of SDC	5c	5c	
4200.01	Loss of AC Power	25a	25a	
4200.01C002	DC Load Shed during a SBO	5a	5a	
4303.01P023	Cross-Connecting Div. 3 DG to Div1(2)ECCS Electrical Busses	2b	2b	
4306.01P001	FLEX Electrical Connections	0d	0d	Directors operator to DC load shed per 4200.01C002
4306.01P002	FLEX UHS Water Supply	0e	0e	Takes about 6 hours to perform per 4306.01P017
4306.01P003	FLEX SPC			
4306.01P004	Makeup to RCS			Strategy 1 (to be used in CSD) below steps are stipulated in 4306.01P017: <ul style="list-style-type: none"> <li>Run ECCS waterleg pumps</li> <li>Pressurize RCS and run RCIC</li> <li>Makeup to using this procedure</li> <li>Open SRV</li> </ul>
4306.01P017	ELAP During Modes 4 and 5	0	0	Supplies high level guidance. Including: <ul style="list-style-type: none"> <li>"Take action to establish primary containment integrity."</li> <li>Consider using ECCS waterleg pumps for RPV injection using power from FLEX DG</li> </ul> Supplies guidance on using 3 strategies depending on POS. For CSD, directs operator to Strategy 1 (see table above)
4411.06	Emergency Containment Venting, Purging, and Vacuum Relief	6b 8/5/18	??	



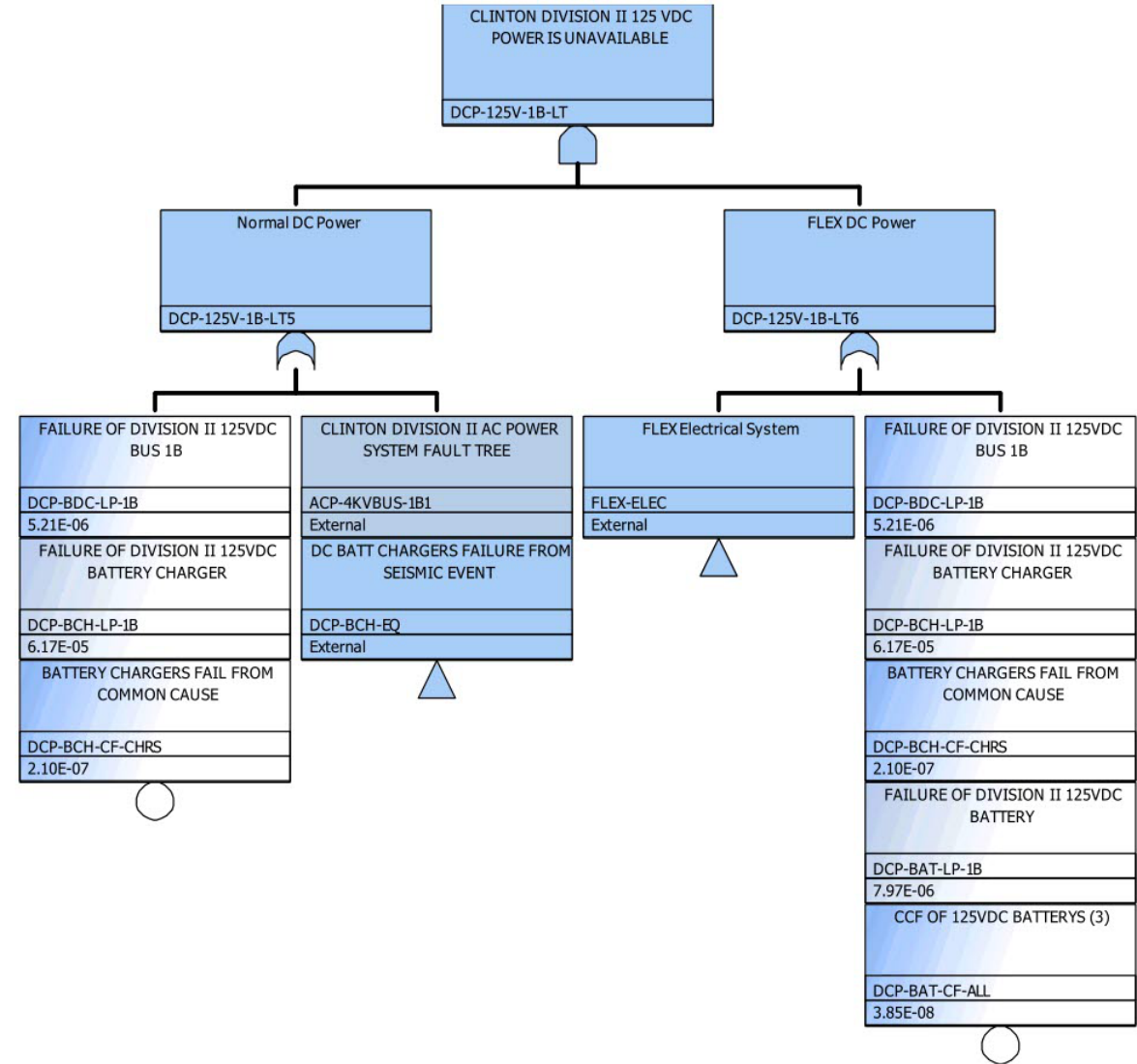
**Table x**  
**Summary of Dominant HRA Results**

Human Error Event	Description	Procedure	Time Needed	Time Available	Mean Diagnosis HEP	Mean Action HEP	Total Mean HEP
SD-XHE-XM-ISDC	Isolate SDC after LOSDC	4006.01					
SD-XHE-XM-XTIE	Cross Tie Div. 3 and Div. 2 Electrical	4303.01P023			4.0E-2	6.0E-1	6.4E-1
SD-XHE-XM-FELEC	Operator Fails to Setup and Run FLEX DG and Electrical Distribution	4306.01P001			2.0E-2	2.3E-1	2.5E-1
SD-XHE-XM-FUHS	Operator Fails UHS Water Supply using FLEX	4306.01P002			2.0E-3	1.1E-1	1.1E-1
SD-XHE-XM-FSPC	Operator Fails Suppression Pool Cooling using FLEX	4306.01P003			1.0E-3	2.3E-1	2.3E-1
SD-XHE-XM-FRCS	Injection into RCS using FLEX Diesel Driven Pumps (4306.01P002 Sections 4.3 and 4.4)	4306.01P004	6 hours		2.0E-3	1.1E-1	1.1E-1
SD-XHE-XM-DCLS	Operator performs DC Load Shed	4200.01C002	1hour		4.0E-2	2.0E-2	6.0E-2
SD-XHE-XM-FWS	Operator Fails to Perform Firewater Injection into RCS	?	4 hours	10 hours			1.2E-1
SD-XHE-XM-FRCIC	Operator Fails to Operate RCIC during ELAP from Shutdown	?			2.0E-3	7.5E-1	7.5E-1
SD-XHE-XM-FINJ	Operator Fails RCS Injection using FLEX SPC (4306.01P004 Section 4.1)	4306.01P004 Section 4.1	1 Hour		2E-3	2E-3	4E-3

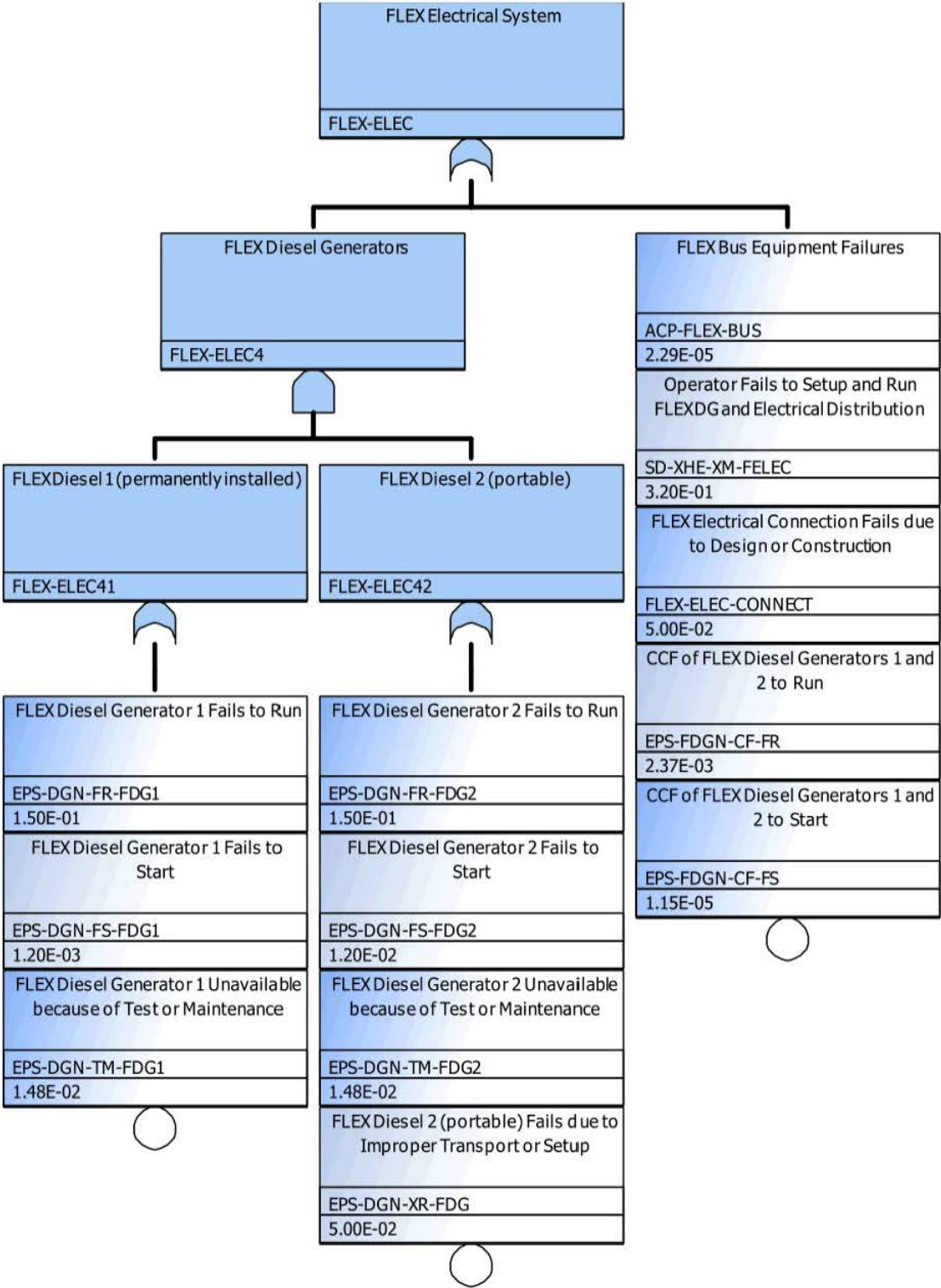
Div.1 DC Bus with Credit for FLEX Fault Tree



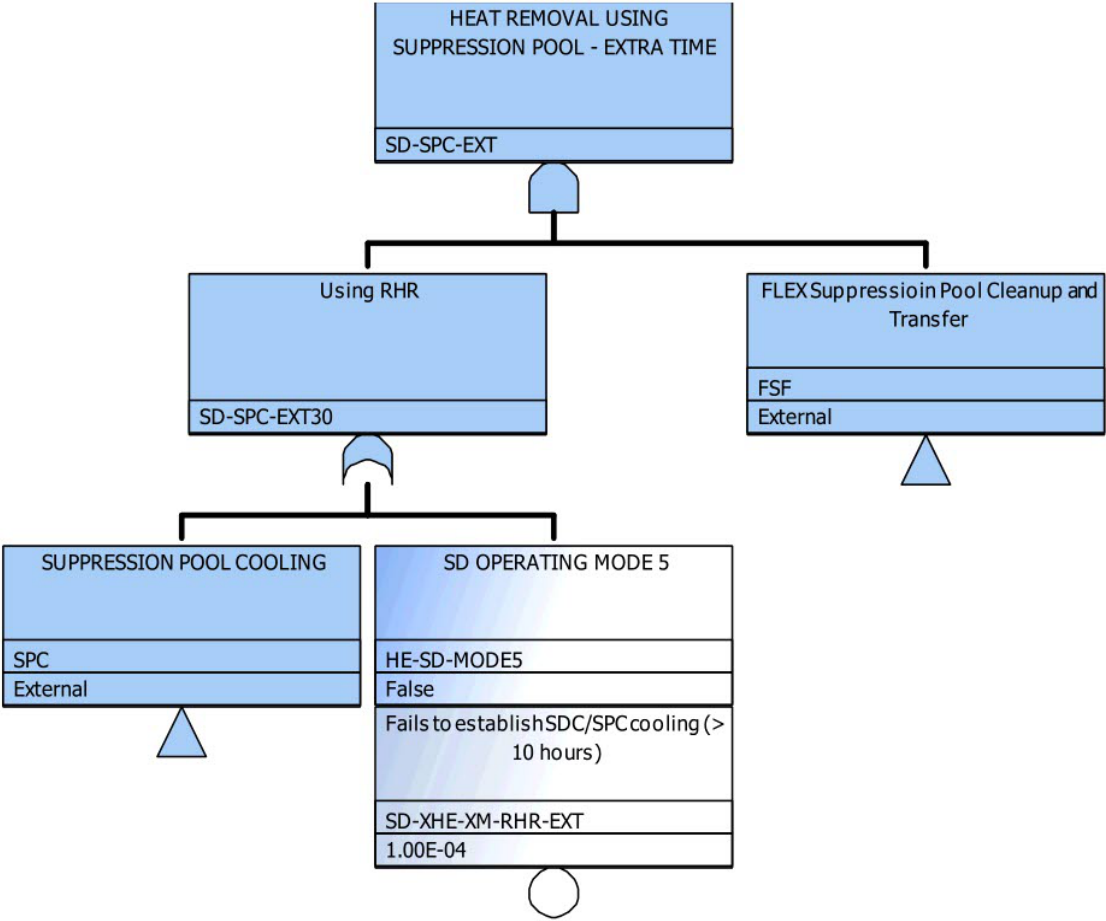
Div. II DC Bus with Credit for FLEX Fault Tree



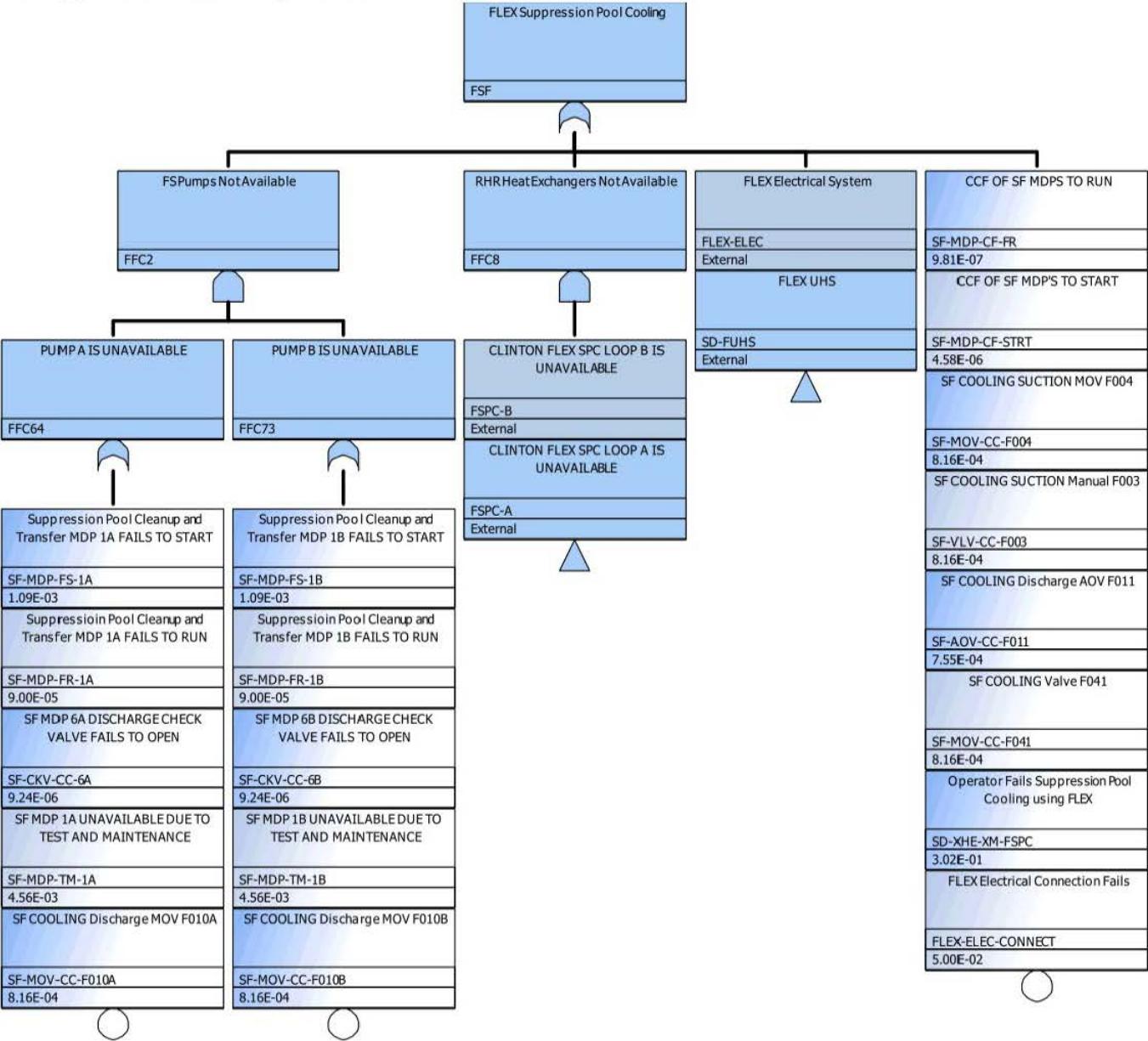
FLEX AC Electrical Fault Tree



Suppression Pool Cooling Crediting FLEX Fault Tree

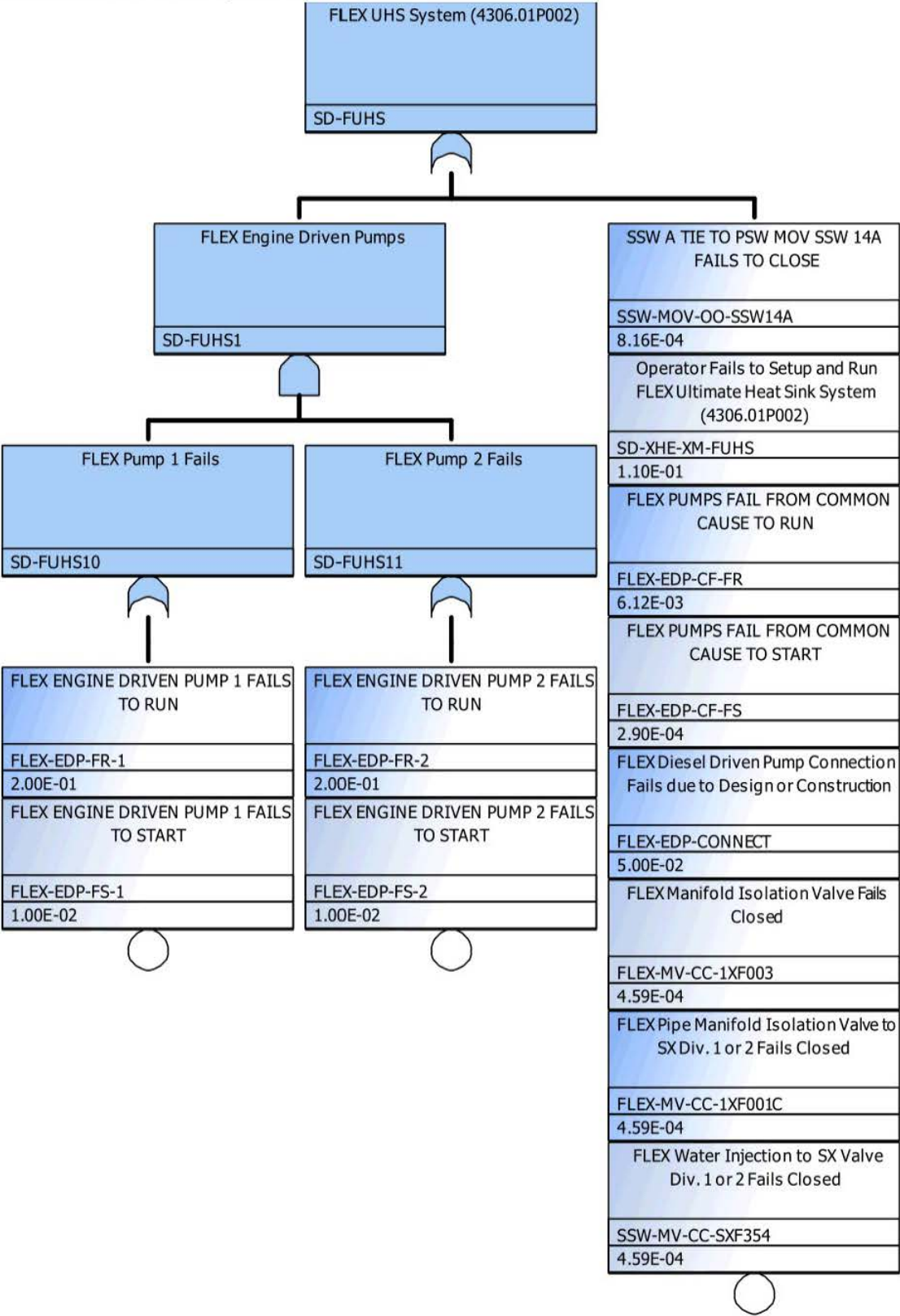


FLEX Suppression Pool Cooling Fault Tree

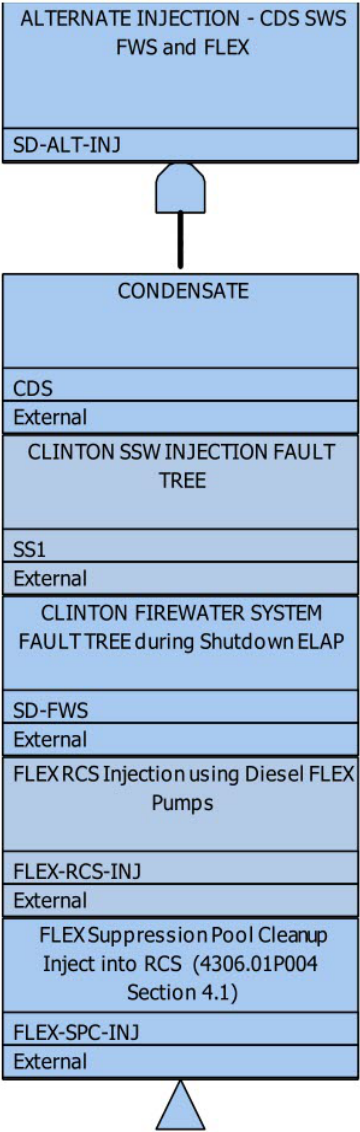




FLEX Ultimate Heat Sink System Fault Tree

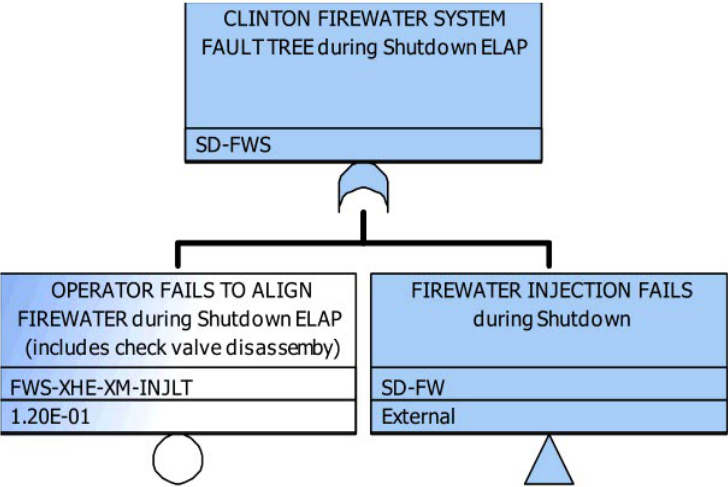


Alternate Injection CDS, SWS, SWS and FLEX Fault Tree

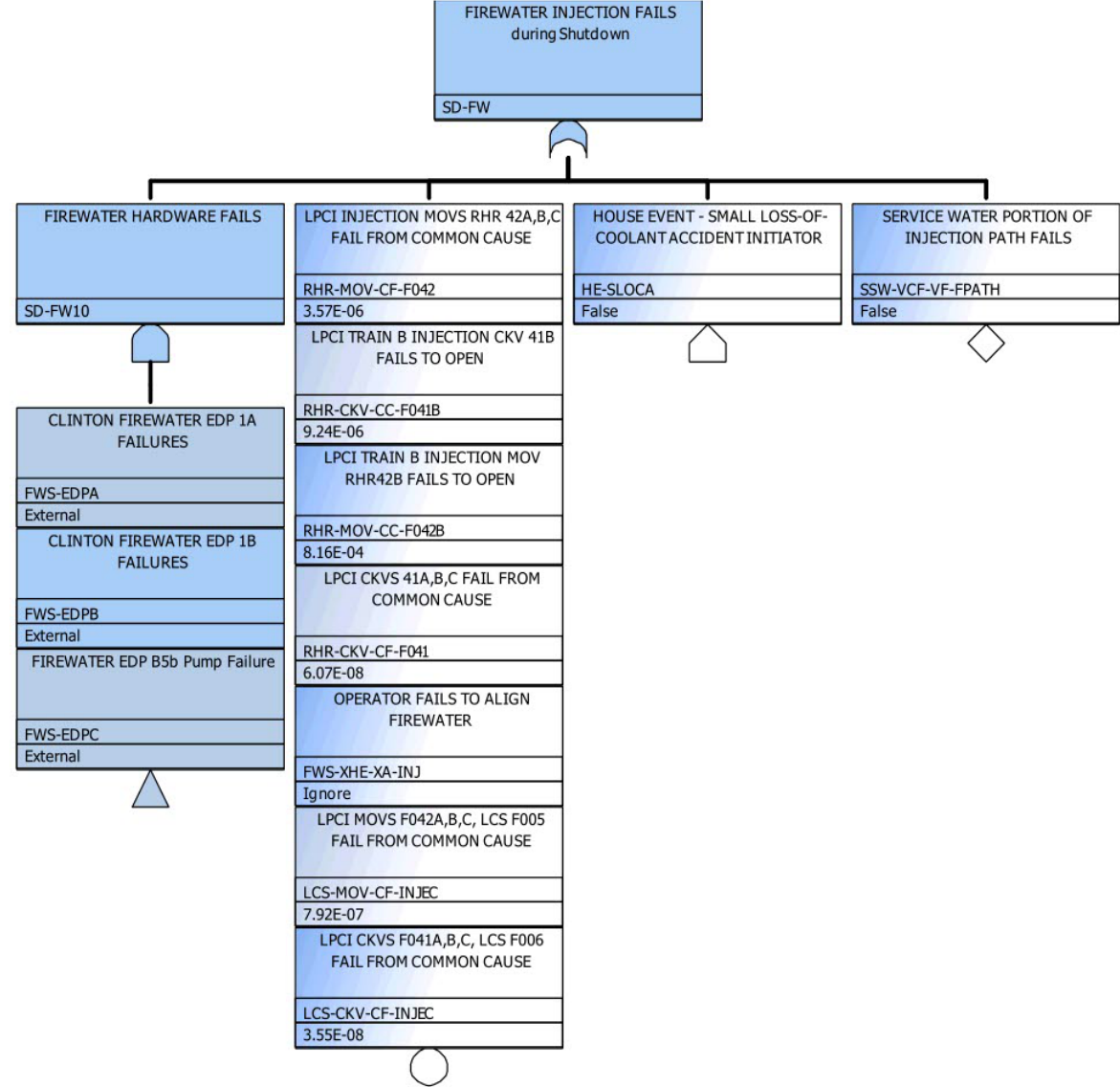




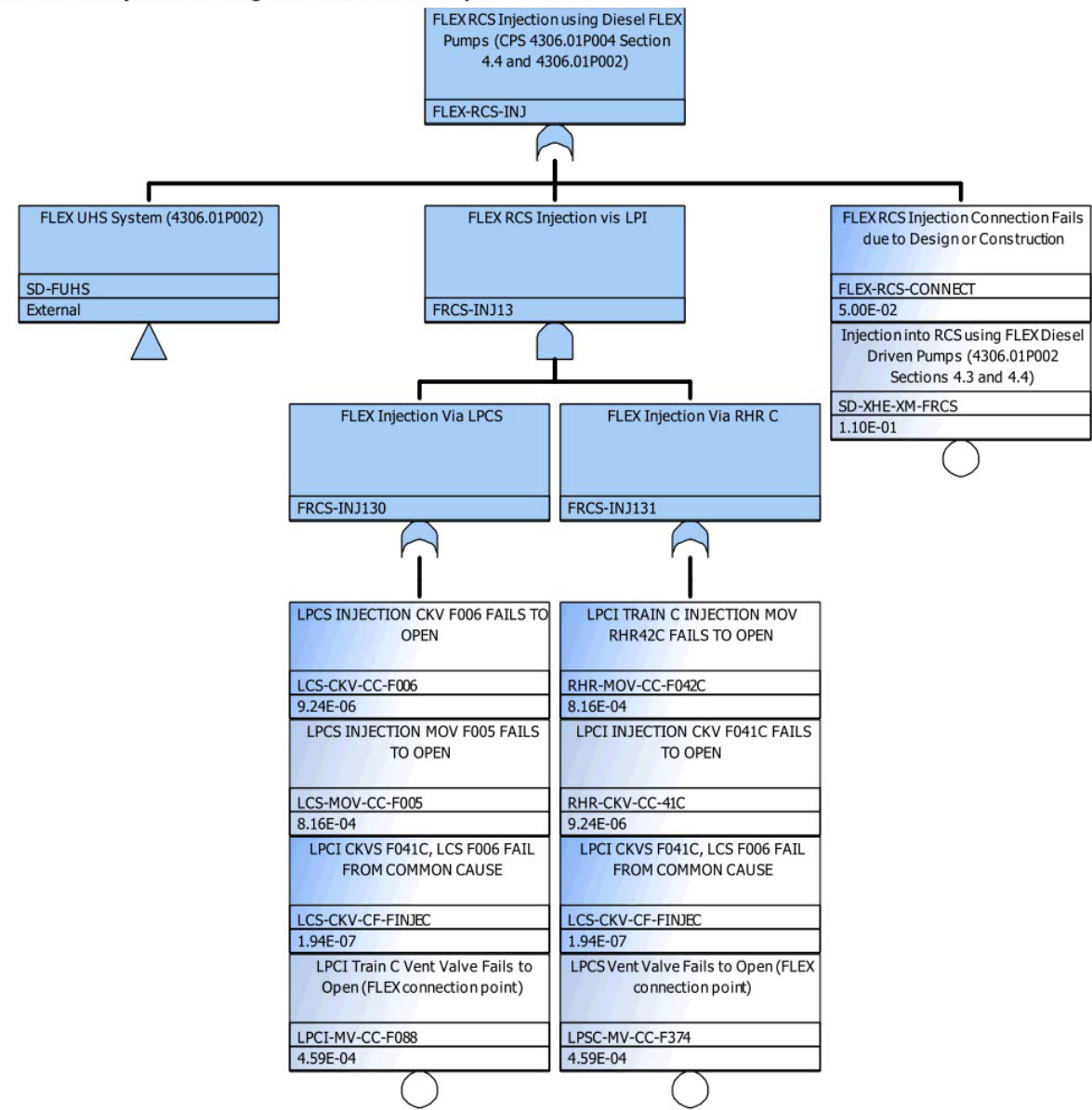
Firewater Injection into RCS Fault Tree



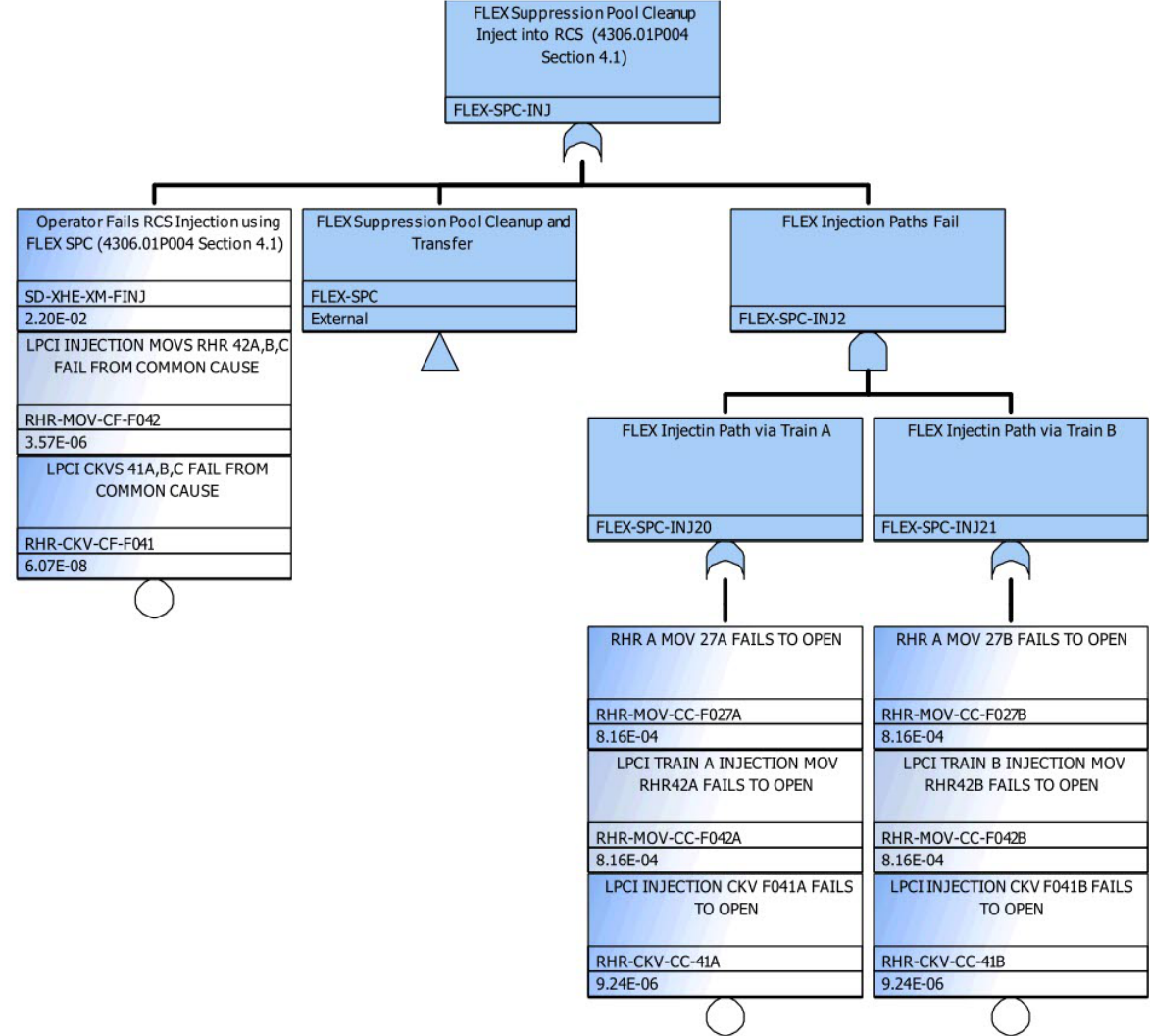
Firewater Equipment Fault Tree



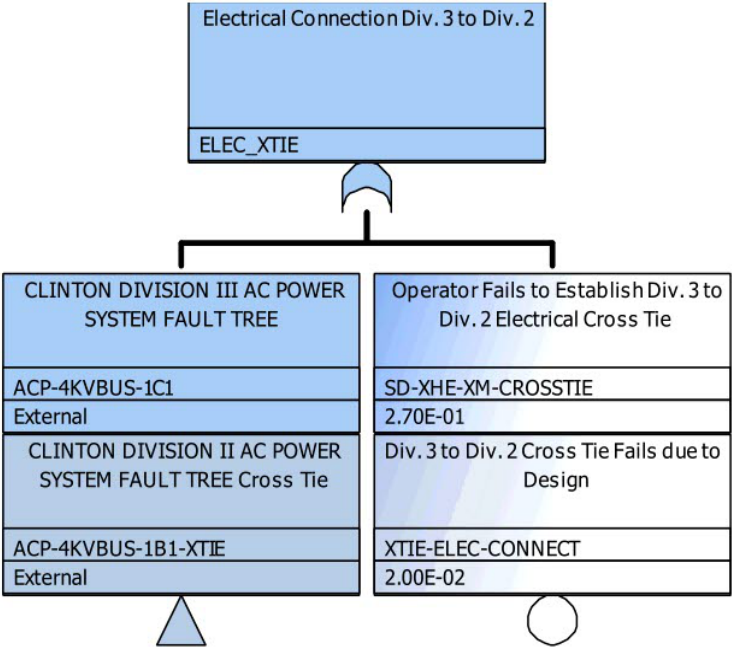
FLEX RCS Injection Using Diesel Driven Pumps Fault Tree



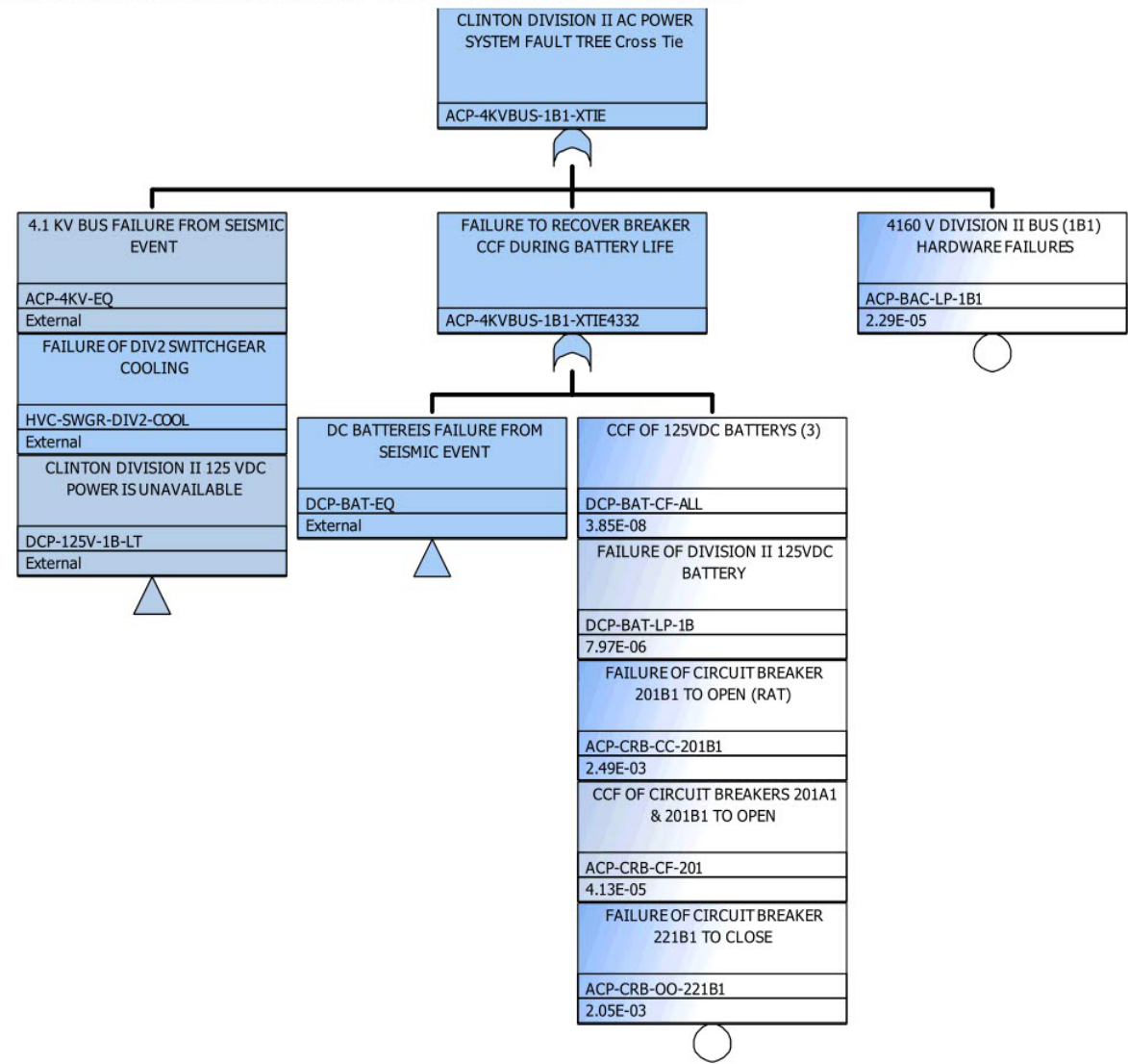
FLEX Suppression Pool Cooling Injection to RCS Fault Tree



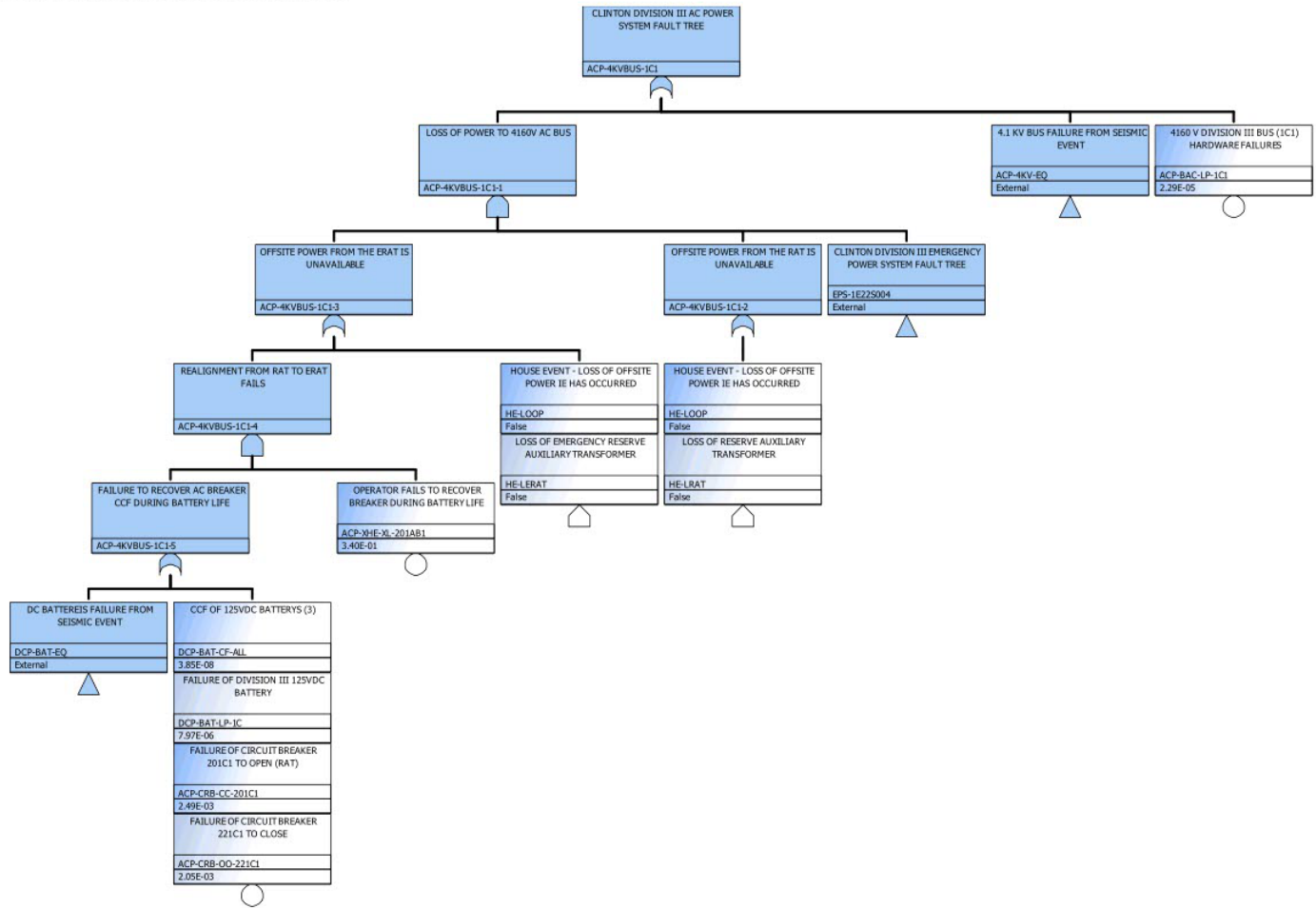
Electrical Cross Tie between Div. 3 and Div. 2 Fault Tree



Division II AC Power Electrical for Cross Tie to Division III Fault Tree



Division III AC Power Fault Tree



**From:** [Mitman, Jeffrey](#)  
**To:** [Kozak, Laura](#)  
**Subject:** RE: Clinton - HRA - Crosstie, FLEX, etc.  
**Date:** Tuesday, August 28, 2018 6:20:53 PM

---

Laura, if I understand your position, I agree with it. My thinking and approach is as follows:

(b)(5)

Jeff Mitman

---

**From:** Kozak, Laura



**Sent:** Friday, August 24, 2018 9:53 AM

**To:** Mitman, Jeffrey <Jeffrey.Mitman@nrc.gov>

**Subject:** Clinton - HRA - Crosstie, FLEX, etc.

Jeff,

A few more thoughts on our discussion yesterday about modeling the cross-tie, etc.

(b)(5)



(b)(5)

Laura

**From:** [Kozak, Laura](#)  
**To:** [Mitman, Jeffrey](#)  
**Subject:** RE: Clinton Model Assumptions.docx  
**Date:** Wednesday, August 29, 2018 6:52:25 AM

---

Do you have some time to talk tomorrow afternoon?

---

**From:** Mitman, Jeffrey  
**Sent:** Wednesday, August 29, 2018 7:49 AM  
**To:** Kozak, Laura <Laura.Kozak@nrc.gov>  
**Subject:** RE: Clinton Model Assumptions.docx

Sounds like a plan.

Jeff Mitman

---

**From:** Kozak, Laura  
**Sent:** Wednesday, August 29, 2018 7:14 AM  
**To:** Mitman, Jeffrey <[Jeffrey.Mitman@nrc.gov](mailto:Jeffrey.Mitman@nrc.gov)>  
**Subject:** RE: Clinton Model Assumptions.docx

Jeff

I'd like to take the following approach. Tell me what you think

Inform NRC management that we currently think the finding is GTG but we are not yet complete. Begin development of a SERP package for a SERP meeting in mid-September as planned. I'm planning to send an email to regional managers today.

I don't think the changes to the event tree that you brought up are necessary at this point. I think we have a pretty well developed sense of what is driving the risk significance so let's focus on the points of modeling that we think are important.

Schedule both a call with Exelon and a trip to Clinton. The call to discuss the cross-tie and the trip to discuss in detailed risk evaluation.

Continue our discussions and refinement of the risk evaluation. Regarding the Clinton specific IEF, I think a sensitivity evaluation is the place to start.

Laura

---

**From:** Mitman, Jeffrey  
**Sent:** Tuesday, August 28, 2018 8:03 PM  
**To:** Kozak, Laura <[Laura.Kozak@nrc.gov](mailto:Laura.Kozak@nrc.gov)>  
**Subject:** Clinton Model Assumptions.docx

Laura, attached is my working document for explaining the model. It is far from complete but it is a start.

Shortly, I'll upload a new version of the model onto SharePoint.

(b)(5)



Jeff Mitman

**From:** [Mitman, Jeffrey](#)  
**To:** [Kozak, Laura](#)  
**Subject:** RE: Clinton - items for discussion  
**Date:** Wednesday, August 29, 2018 5:40:06 PM  
**Attachments:** [Clinton Shutdown SPAR model comments jtm.docx](#)

---

Note to requester: The attachment to this email has been withheld in its entirety under FOIA Ex. B5 (deliberative process privilege).

Laura, my ideas are noted in the attached markup of your items.

Jeff Mitman

---

**From:** Kozak, Laura  
**Sent:** Tuesday, August 28, 2018 6:16 PM  
**To:** Mitman, Jeffrey <Jeffrey.Mitman@nrc.gov>  
**Subject:** Clinton - items for discussion

Jeff

Please see my comments/questions/items for discussion in the attached.

Thanks for all your hard work on this issue.

Laura

(b)(5)



(b)(5)

**From:** [Kozak, Laura](#)  
**To:** [Mitman, Jeffrey](#)  
**Subject:** Clinton  
**Date:** Thursday, August 30, 2018 4:56:00 PM  
**Attachments:** [Clinton 8.54.zip](#)

---

Note to requester: The attachment to this email has been withheld in its entirety under FOIA Ex. B5 (deliberative process privilege).

Jeff

Attached is the Clinton SPAR model where I added a LOOPSD event tree that I have been manipulating. Much less detailed than your model.

But you can see how I handled OSP recovery by adding an operator action.

I'm not sure why I can put anything on the share point site anymore.

Laura



Note to requester: The attachment to this email has been withheld in its entirety under FOIA Ex. B5 (deliberative process privilege).

**From:** [Stoedter, Karla](#)  
**To:** [Kozak, Laura](#)  
**Cc:** [Phillips, Charles](#)  
**Subject:** Clinton EDG Unavailability SERP  
**Date:** Thursday, August 30, 2018 5:26:00 AM  
**Attachments:** [Clinton EDG Unavailability IFRB Rev 1 .docm](#)

---

Laura,  
Attached is the most recent IFRB package which includes the planning SERP info and the form for completing the SERP package. Let me know if you need anything additional from the branch as we prepare to move forward.  
Thanks,  
Karla

**From:** [Stoedter, Karla](#)  
**To:** [Sanchez Santiago, Elba](#)  
**Subject:** FW: Clinton  
**Date:** Thursday, August 30, 2018 2:04:00 PM

---

(b)(5)

**From:** Kozak, Laura  
**Sent:** Thursday, August 30, 2018 1:22 PM  
**To:** Stoedter, Karla <Karla.Stoedter@nrc.gov>  
**Cc:** Mitman, Jeffrey <Jeffrey.Mitman@nrc.gov>; Phillips, Charles <Charles.Phillips@nrc.gov>  
**Subject:** Clinton

Karla

Jeff and I are talking to the licensee about the Division 3 crosstie to Division 2 next week. One of Jeff's questions that potentially impacts the risk modeling is whether this procedure can be accomplished without DC power. We wondered if the residents or maybe Chuck could take a look at the procedure/walk it down, and give us any thoughts?

Laura

**From:** [Stoedter, Karla](#)  
**To:** [Kozak, Laura](#)  
**Cc:** [Mitman, Jeffrey](#); [Phillips, Charles](#)  
**Subject:** RE: Clinton  
**Date:** Thursday, August 30, 2018 2:00:00 PM

---

(b)(5)

**From:** Kozak, Laura  
**Sent:** Thursday, August 30, 2018 1:22 PM  
**To:** Stoedter, Karla <Karla.Stoedter@nrc.gov>  
**Cc:** Mitman, Jeffrey <Jeffrey.Mitman@nrc.gov>; Phillips, Charles <Charles.Phillips@nrc.gov>  
**Subject:** Clinton

Karla

Jeff and I are talking to the licensee about the Division 3 crosstie to Division 2 next week. One of Jeff's questions that potentially impacts the risk modeling is whether this procedure can be accomplished without DC power. We wondered if the residents or maybe Chuck could take a look at the procedure/walk it down, and give us any thoughts?

Laura

**From:** [Kozak, Laura](#)  
**To:** [Stoedter, Karla](#); [Sanchez Santiago, Elba](#)  
**Cc:** [Mitman, Jeffrey](#)  
**Subject:** Conversation with Exelon - Division 3 cross-tie  
**Date:** Thursday, September 06, 2018 3:54:00 PM

---

Just FYI –

We had our conversation today on the cross-tie procedure. The licensee did say that they believe resetting the lockouts requires DC power. We asked them to verify this and whether resetting the lockout also requires AC power.

We also asked for general procedure guidance/direction for resetting the lockouts – (b)(5)

(b)(5)

We are beginning to have some back and forth with the licensee about our view of the operator response vs. their view. It should be interesting!

Elba – next week, in addition to discussing the FLEX UHS, can we also walk down the crosstie procedure again?

Thanks for the support!

Laura

**From:** [Mitman, Jeffrey](#)  
**To:** [Kozak, Laura](#)  
**Subject:** FW: RE: Model Punch List and Notes 09-05-2018.xlsx  
**Date:** Thursday, September 06, 2018 4:09:52 PM  
**Attachments:** [image001.png](#)  
[image002.png](#)

---

Laura, fyi.

Jeff Mitman

---

**From:** Robert F. Buell [mailto:[robert.buell@inl.gov](mailto:robert.buell@inl.gov)]  
**Sent:** Thursday, September 06, 2018 5:02 PM  
**To:** Mitman, Jeffrey <[Jeffrey.Mitman@nrc.gov](mailto:Jeffrey.Mitman@nrc.gov)>  
**Subject:** [External\_Sender] RE: Model Punch List and Notes 09-05-2018.xlsx

Jeff,

(b)(5)

This can be modified to something like:

(b)(5)

(b)(5)

(b)(5)

FYI, I will be out of the office tomorrow and all of next week. Hope this helps.

---

**From:** Mitman, Jeffrey [<mailto:Jeffrey.Mitman@nrc.gov>]  
**Sent:** Wednesday, September 05, 2018 4:46 PM  
**To:** Robert F. Buell <[robert.buell@inl.gov](mailto:robert.buell@inl.gov)>  
**Cc:** Kozak, Laura <[Laura.Kozak@nrc.gov](mailto:Laura.Kozak@nrc.gov)>  
**Subject:** Model Punch List and Notes 09-05-2018.xlsx

Bob, on the spreadsheet tab labeled "ET Top Logic" is a table. The table describes each of the ET tops: name, current top logic solving method, current quantification and comments. Two issues that I'd like to discuss in more on Thursday. 1) What do you recommend for the solving method? 2) Why is the SD-ALT-HEAT quantifying to 1.1E-2 instead of 1.0?

The ET structure is the same as you supplied to me several weeks ago. However, some of the FTs have been modified to credit FLEX. The SD-ALT-HEAT FT has not been touched.

I'll send the model in a separate email.

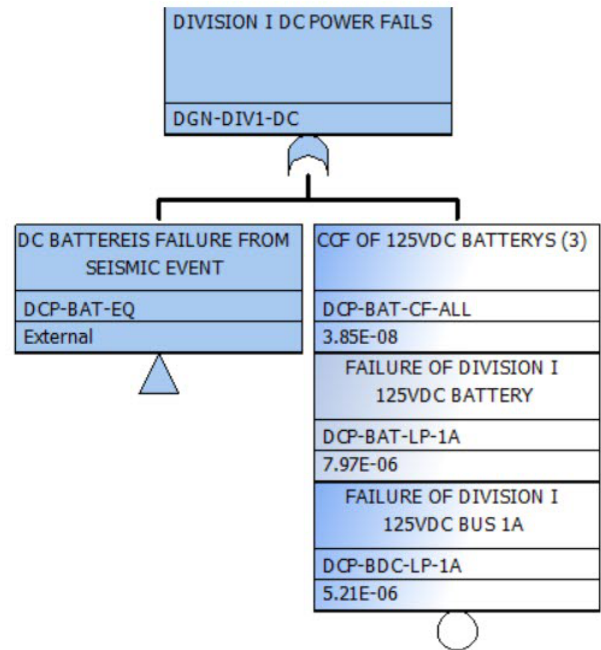
Thanks.

Jeff Mitman

**From:** [Kozak, Laura](#)  
**To:** [Mitman, Jeffrey](#)  
**Subject:** RCIC support system fault tree  
**Date:** Thursday, September 06, 2018 9:26:00 AM  
**Attachments:** [image001.png](#)

(b)(5) I looked at this tree as requested. [redacted]  
(b)(5) [redacted]

This is my first cut at review, I am still looking.



**From:** [Kozak, Laura](#)  
**To:** [Mitman, Jeffrey](#)  
**Subject:** Clinton - Recovery of Division 2 DG  
**Date:** Friday, September 07, 2018 7:48:00 AM

---

Jeff

(b)(5)

The evaluation contains the following statement:

Procedures are in place and will be used. Plenty of cues. Designated EO familiar with actions. DG will start when lockout relay is reset (at end of actions included in procedure). (Mike Antonelli, 6/21/2018)  
NOTE: Above says "DG will start when lockout relay is reset"... That is not technically true if DC load shedding has opened Circuit 13. According to Mike Antonelli (SRO), 7/9/2018: 1) "We have trained in the simulator for partial load sheds when you think you can restore the engine. For example, a scenario where we had the DG heat exchanger cooling valve fail to open, we will load shed, but not load shed the DG breaker if we didn't need to so we can get someone in the field to open the cooling valve locally/manually."

(b)(5)

Laura



**From:** [Kozak, Laura](#)  
**To:** [Louden, Patrick](#); [Lara, Julio](#); [O'Brien, Kenneth](#); [Heck, Jared](#); [Skokowski, Richard](#); [Stone, AnnMarie](#); [Stoedter, Karla](#); [Dickson, Billy](#); [Duncan, Eric](#); [Cameron, James](#); [Hanna, John](#); [Feliz-Adorno, Nestor](#); [Hills, David](#); [Daley, Robert](#); [Orlikowski, Robert](#); [Peterson, Hironori](#)  
**Subject:** IFRB status  
**Date:** Friday, September 07, 2018 10:18:00 AM  
**Attachments:** [Copy of IFRB\\_Status September 7 2018 open.pdf](#)

---

Please see attached – updated status for both Fermi and Clinton issues, which are TBD and on the “90 day clock”

Laura

## Inspection Finding Review Board - Issues Under Development

Discovery Date	Plant	Issue	IFRB Date Chair	IFRB Conclusion	Open/Closed/Status
Non Responsive					
(b)(5)					
Non Responsive					

**From:** [Kozak, Laura](#)  
**To:** [Mitman, Jeffrey](#)  
**Subject:** Licensee HRA of DG recovery  
**Date:** Friday, September 07, 2018 10:06:00 AM  
**Attachments:** [image003.png](#)

---

(b)(5)



**From:** [Stoedter, Karla](#)  
**To:** [Kozak, Laura](#)  
**Subject:** RE: Clinton -briefing  
**Date:** Monday, September 17, 2018 3:30:00 PM

---

I'll be back tomorrow so we can discuss the briefing paper. Thanks so much for starting the bullets. I also need to talk to Pat about whether he wants me there in person or not. I'm supposed to be driving to Clinton on Thursday morning.

[Redacted]

(b)(5)

I just had another thought that I'm not sure we want to pursue.

(b)(5)

[Redacted]

(b)(5)

I'll talk to you tomorrow,  
Karla

---

**From:** Kozak, Laura  
**Sent:** Monday, September 17, 2018 2:43 PM  
**To:** Stoedter, Karla <Karla.Stoedter@nrc.gov>  
**Subject:** Clinton -briefing  
Hi Karla  
I drafted the attached. Comments? Let's discuss  
Laura

**From:** [Kozak, Laura](#)  
**To:** [Stoedter, Karla](#)  
**Subject:** Clinton SERP  
**Date:** Sunday, September 09, 2018 10:18:50 AM  
**Attachments:** [Clinton EDG Unavailability SERP.docm](#)

---

Hi Karla

This is very draft but I thought I would give you an opportunity to read/comment/question now, since we are on such a tight schedule to complete the work and the package this week.

It does not yet have a bottom line recommendation (i.e., no color or number yet) as we are still finalizing the analysis and it could still change as a result of our visit to Clinton Monday and Tuesday.

(b)(5)

Laura

EXHIBIT 1 – IFRB FINDING FORM

IFRB Cover Sheet	
Facility Name/Location: Clinton	Name of Utility or Licensee: Exelon
Docket Number(s): 50-461	EA Number: EA-18-104
(b)(5)	

Issue Date: (b)(5)

Exh1-1

0609.05TP

(b)(5)

Issue Date: (b)(5)

Exh1-2

0609.05TP

(b)(5)

Issue Date: (b)(5)

Exh1-3

0609.05TP



(b)(5)

Issue Date:

(b)(5)

Exh1-4

0609.05TP

(b)(5)

Issue Date: (b)(5)

Exh1-5

0609.05TP

(b)(5)

Issue Date: (b)(5)

Exh1-6

0609.05TP

(b)(5)

Issue Date: (b)(5)

Exh1-7

0609.05TP

(b)(5)

Issue Date: (b)(5)

Exh1-8

0609.05TP

(b)(5)

Issue Date:

(b)(5)

Exh1-9

0609.05TP

(b)(5)

Issue Date: (b)(5)

Exh1-10

0609.05TP

(b)(5)



Issue Date: (b)(5)

Exh1-11

0609.05TP





(b)(5)

Issue Date: (b)(5)

Exh1-12

0609.05TP

(b)(5)

Issue Date: (b)(5)

Exh1-13

0609.05TP

(b)(5)

Issue Date:

(b)(5)

Exh1-14

0609.05TP

(b)(5)

Issue Date:

(b)(5)

Exh1-15

0609.05TP

(b)(5)

Issue Date: (b)(5)

Exh1-16

0609.05TP

(b)(5)

Issue Date:

(b)(5)

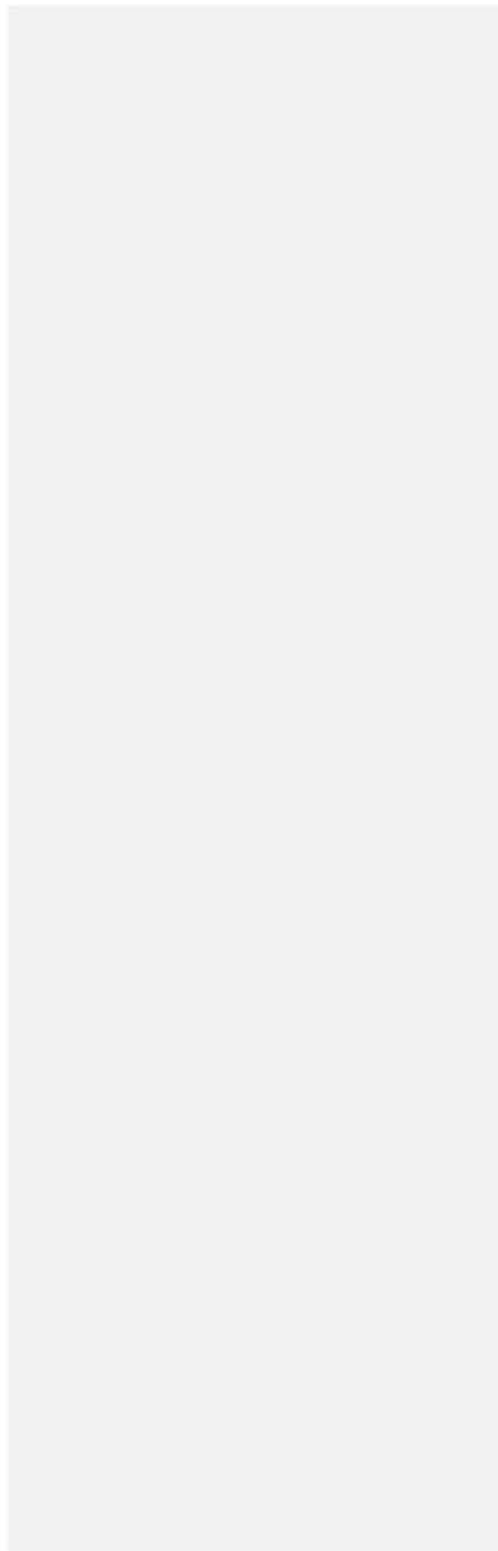
Exh1-17

0609.05TP

Issue Date: (b)(5)

Exh1-18

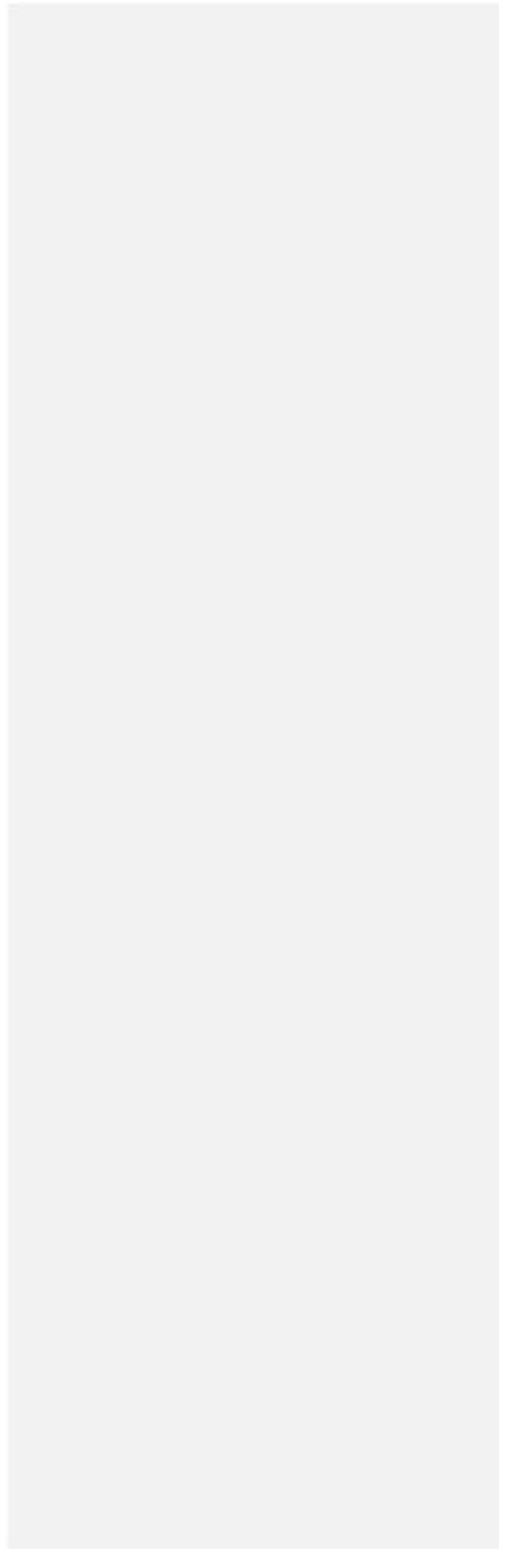
0609.05TP



Issue Date: (b)(5)

Att1-1

0609.05TP





**From:** [Kozak, Laura](#)  
**To:** [Mitman, Jeffrey](#)  
**Subject:** draft SERP package  
**Date:** Sunday, September 09, 2018 10:15:50 AM  
**Attachments:** [Clinton EDG Unavailability SERP.docm](#)

---

Note to requester: The attachment was processed in a previous document in the final release. The document is not included again here.

Jeff

I put a draft SERP package on the share point site and attached it here. I have written up the background material, including assumptions, references, differences with the licensee, etc. I need to complete this document and submit it to our enforcement staff on Thursday. So please take a look if you can and comment or edit as necessary.

I intend to complete this document on Wednesday/Thursday with our recommendation and basis. I know this is tight but I feel like we are almost there.

Laura

**From:** [Dahbur, Alan](#)  
**To:** [Hafeez, Ijaz](#)  
**Cc:** [Daley, Robert](#); [Sanchez Santiago, Elba](#); [Sargis, Daniel](#)  
**Subject:** FW: Clinton Cross-tie procedure review  
**Date:** Monday, September 10, 2018 2:27:17 PM  
**Attachments:** [4303.01P023 \(002\).pdf](#)

Note to requester: Attachment is a non-responsive record due to clarifying the request to exclude licensee originated documents.

Bob,

Jesse has agreed to look into this issue to help DRP.

---

**From:** Sanchez Santiago, Elba  
**Sent:** Monday, September 10, 2018 12:45 PM  
**To:** Dahbur, Alan <Alan.Dahbur@nrc.gov>  
**Cc:** Kozak, Laura <Laura.Kozak@nrc.gov>; Mitman, Jeffrey <Jeffrey.Mitman@nrc.gov>; Sargis, Daniel <Daniel.Sargis@nrc.gov>; Stoedter, Karla <Karla.Stoedter@nrc.gov>  
**Subject:** Clinton Cross-tie procedure review

Alan,

We are requesting your assistance in reviewing the attached procedure to determine whether it can be performed/completed with no AC or DC power. Below is some background information on why we are reviewing this procedure to provide some context into what we are looking for:

Background:

In May 2018, during the refueling outage, the licensee found the starting air for the Division 2 EDG was isolated. When this condition was discovered the Division 1 EDG was tagged out for maintenance. As a result of this condition, the region sent out a special inspection team to assess the issue. The team identified multiple violations one of which required a detailed risk evaluation. [REDACTED]

(b)(5)

[REDACTED]  
(b)(5)

Questions:

- [REDACTED]
- [REDACTED]

[REDACTED]  
(b)(5)

(b)(5)

Timeline:

- The SERP is currently scheduled for Thursday, September 20. Our conclusions from this review will feed into the significance determination. Therefore we are requesting a response ASAP, but by Wednesday, September 12<sup>th</sup> the latest to allow the SRA's to incorporate the conclusions into their analysis. Let me know if this timeline is doable.

Also, let me know if you need any additional information for your review or if you have any questions for us.

Thanks for your help,

*Elba Sanchez Santiago*

Senior Resident Inspector

Clinton Power Station

RIII/DRP/Branch 1

(217) 935-9521

**From:** [Stoedter, Karla](#)  
**To:** [Kozak, Laura](#)  
**Subject:** RE: Clinton SERP  
**Date:** Monday, September 10, 2018 5:01:43 AM

---

I don't have any major comments. I did notice that the SERP package "cover sheet" seems to want a summary of the information contained further in the document. I'm not sure how well we will be able to summarize the information due to the length of the violation and all of the assumptions that you had to make to perform the DRE. Looks like I will need to add this information prior to giving the package to EICS. I'm tempted to just refer to the sections containing the information. What are your thoughts?

---

**From:** Kozak, Laura  
**Sent:** Sunday, September 09, 2018 10:19 AM  
**To:** Stoedter, Karla <Karla.Stoedter@nrc.gov>  
**Subject:** Clinton SERP

Hi Karla

This is very draft but I thought I would give you an opportunity to read/comment/question now, since we are on such a tight schedule to complete the work and the package this week.

It does not yet have a bottom line recommendation (i.e., no color or number yet) as we are still finalizing the analysis and it could still change as a result of our visit to Clinton Monday and Tuesday.

(b)(5)

[Redacted]

Laura

**From:** [Hafeez, Ijaz](#)  
**To:** [Dahbur, Alan](#); [Sanchez Santiago, Elba](#); [Stoedter, Karla](#); [Kozak, Laura](#); [Hanna, John](#)  
**Cc:** [Daley, Robert](#); [Robbins, John](#); [Sargis, Daniel](#)  
**Subject:** Clinton Questions.docx  
**Date:** Tuesday, September 11, 2018 3:25:35 PM  
**Attachments:** [Clinton Questions.docx](#)

---

All,

Please call if you have additional questions.

Thanks

Background:

In May 2018, during the refueling outage, the licensee found the starting air for the Division 2 EDG was isolated. When this condition was discovered the Division 1 EDG was tagged out for maintenance. As a result of this condition, the region sent out a special inspection team to assess the issue. The team identified multiple violations one of which required a detailed risk evaluation. [REDACTED]

(b)(5)

(b)(5)

Questions:

(b)(5)

(b)(5)

Timeline:

- The SERP is currently scheduled for Thursday, September 20. Our conclusions from this review will feed into the significance determination. Therefore we are requesting a response ASAP, but by Wednesday, September 12<sup>th</sup> the latest to allow the SRA's to incorporate the conclusions into their analysis. Let me know if this timeline is doable.

Also, let me know if you need any additional information for your review or if you have any questions for us.

Given:

- The site is experiencing a loss of all off-site power.
  - Division 1 diesel generator is under maintenance and therefore not recoverable
  - Division 2 diesel generator does not start due to the isolation of the air start storage tank
  - Division 1 and Division 2 DC power is available from station batteries
  - Division 1 and Division 2 inverters are available [instrumentation]
  - Division 1 and Division 2 battery chargers are not available
  - No other equipment is out of service or unavailable
- 

Q1 Would the licensee need AC power to accomplish this procedure?

Response: Based on the information provided, AC power is not needed to implement procedure CPS 4303.01P023, "Cross-Connecting Div 3 to Div 2 ECCS Electrical Busses."

Q2 Would the licensee need DC power to accomplish this procedure?

Response: Yes, DC power is needed in order for equipment to be manipulated from the control room. Procedure CPS 4303.01P023, "Cross-Connecting Div 3 to Div 2 ECCS Electrical Busses," is written with the assumption that DC power will be available. Under the assumptions stated above, DC power is expected to be available.

Additionally, while the procedure directs manipulation of equipment from the control room, equipment may be manipulated in the field to accomplish the intent of the procedure without DC power. It would likely take significantly more time to implement manually, but it could be done.

Q3 Can lockout relays be reset manually with no power?

Response: Yes, in general this can be done manually. We did not specifically review vendor manuals for the lockout relays.

Q4 Is manually resetting the lockout relays a complicated evolution?

Response: No, this is typically a single hand switch manipulation.

Q5 What would happen when [off-site] power is restored to the relay?

Response: Restoration of power to the switchyard and then to the reserve transformer will not impact operation of plant equipment after buses have been isolated from the reserve transformer at step 1.2. Connections to the main transformer are also isolated at step 1.2, DC control power fuses are removed after opening to preclude inadvertent closure to a source of off-site power. Reconnecting to off-site power, once available, is not discussed in the procedure.

Q6 After manually resetting the lockout relay are they capable of actuation?

Response: It is possible that transformer protection systems may still have the potential to open main and reserve feed breakers associated with the bus in use, 1ET4. Additionally, as the Division 3 diesel generator is smaller than the Division 2 generator, it is possible that, if control room staff are not cautious when applying loads, Division 3 could trip. We would need more information to be able to discuss this question with more detail.



**From:** [Murray, Robert](#)  
**To:** [Phillips, Charles](#); [Karla Stoedter \(Karla.Stoedter@nrc.gov\)](#)  
**Cc:** [Louden, Patrick](#); [Lara, Julio](#); [Chandrathil, Prema](#); [Draper, Jason](#); [Mitlyng, Viktoria](#)  
**Subject:** RE: Clinton SIT report is discussed in Lochabum's blog  
**Date:** Tuesday, September 11, 2018 11:35:00 AM

---

(b)(5)

Reading Lochbaum's blog on this issue,



Chuck and Karla – nice job crafting the report into a final product for an intrusive inspection that accomplished what we intended.

Rob

---

**From:** Chandrathil, Prema  
**Sent:** Tuesday, September 11, 2018 8:25 AM  
**To:** West, Steven <Steven.West@nrc.gov>; Roberts, Darrell <Darrell.Roberts@nrc.gov>; Louden, Patrick <Patrick.Louden@nrc.gov>; Lara, Julio <Julio.Lara@nrc.gov>; O'Brien, Kenneth <Kenneth.O'Brien@nrc.gov>; Shuaibi, Mohammed <Mohammed.Shuaibi@nrc.gov>; Heck, Jared <Jared.Heck@nrc.gov>; Giessner, John <John.Giessner@nrc.gov>; Lipa, Christine <Christine.Lipa@nrc.gov>; Stoedter, Karla <Karla.Stoedter@nrc.gov>; Riemer, Kenneth <Kenneth.Riemer@nrc.gov>; Sanchez Santiago, Elba <Elba.SanchezSantiago@nrc.gov>; Sargis, Daniel <Daniel.Sargis@nrc.gov>; Phillips, Charles <Charles.Phillips@nrc.gov>; Murray, Robert <Robert.Murray@nrc.gov>; Draper, Jason <Jason.Draper@nrc.gov>; Kozak, Laura <Laura.Kozak@nrc.gov>; Mitman, Jeffrey <Jeffrey.Mitman@nrc.gov>  
**Cc:** Mitlyng, Viktoria <Viktoria.Mitlyng@nrc.gov>  
**Subject:** Clinton SIT report is discussed in Lochabum's blog

FYI-

Lochbaum talks about the Clinton special inspection and recently issued report in his blog.

<https://allthingsnuclear.org/dlochbaum/clinton-power-problems>

Prema

Prema Chandrathil  
Public Affairs Officer



U.S. NRC Region III  
630-829-9663

**From:** [Kozak, Laura](#)  
**To:** [Louden, Patrick](#); [Stoedter, Karla](#)  
**Cc:** [Lara, Julio](#); [Hanna, John](#); [Sanchez Santiago, Elba](#); [Sargis, Daniel](#)  
**Subject:** Clinton SDP update  
**Date:** Wednesday, September 12, 2018 11:29:42 AM

---

We had a 4 hour meeting yesterday with Exelon PRA analysts and presented the current risk model. The event tree, fault trees, assumptions, and human reliability analysis were discussed at length. The licensee provided a significant amount of feedback and asked us to consider some alternate assumptions. I believe the licensee understands our model. We will not be able to consider the feedback by tomorrow's deadline for submitting a SERP package and we also can't project the outcome with alternate considerations without doing further review.

(b)(5) [REDACTED]

(b)(5) [REDACTED] Jeff has a briefing of his management tomorrow morning and I will participate.

(b)(5) Karla and I talked this morning and plan to meet with Pat tomorrow on the status and look for a decision to either [REDACTED]

[REDACTED] (b)(5)

(b)(5) [REDACTED] The licensee estimated

(b)(5) the risk at E-8. [REDACTED]

[REDACTED] (b)(5)

(b)(5) [REDACTED] This is not the only influential assumption.

[REDACTED] (b)(5)

**From:** [Kozak, Laura](#)  
**To:** [Stoedter, Karla](#); [Mitman, Jeffrey](#)  
**Subject:** draft Clinton SERP package  
**Date:** Wednesday, September 12, 2018 2:10:05 PM  
**Attachments:** [Clinton EDG Unavailability SERP.docm](#)

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Jeff, Karla

Talked with both of you today about where we are at with the DRE and the recent significant feedback from the licensee.

If we choose to move forward to a SERP, I developed the attached draft SERP package based on today's knowledge and risk insights. It discusses the current DRE as consistent with the phase 2 result and acknowledges that HRA is driving the risk and will continue to be uncertain.

Please let me know if you have comments/questions.

If we decide to move forward consistent with the original plan, this package must be submitted tomorrow.

Jeff – FYI. Pat was in HQ but leaving today. Gave him a heads up on the status. Karla and I plan to meet with him tomorrow afternoon.

Laura

EXHIBIT 1 – IFRB FINDING FORM

IFRB Cover Sheet	
Facility Name/Location: Clinton	Name of Utility or Licensee: Exelon
Docket Number(s): 50-461	EA Number: EA-18-104

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Issue Date (b)(5)

Exh1-1

0609.05TP

(b)(5)

Issue Date: (b)(5)

Exh1-2

0609.05TP

(b)(5)

Issue Date: (b)(5)

Exh1-3

0609.05TP

(b)(5)

Issue Date:

(b)(5)

Exh1-4

0609.05TP

(b)(5)

Issue Date: (b)(5)

Exh1-5

0609.05TP



(b)(5)

Issue Date: (b)(5)

Exh1-6

0609.05TP

(b)(5)

Issue Date: (b)(5)

Exh1-7

0609.05TP

(b)(5)

Issue Date:

(b)(5)

Exh1-8

0609.05TP

(b)(5)

Issue Date: (b)(5)

Exh1-9

0609.05TP

(b)(5)

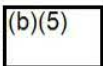
Issue Date: (b)(5)

Exh1-10

0609.05TP

(b)(5)



Issue Date: 

Exh1-11

0609.05TP



(b)(5)

Issue Date: (b)(5)

Exh1-12

0609.05TP

(b)(5)

Issue Date: (b)(5)

Exh1-13

0609.05TP



(b)(5)

Issue Date:

(b)(5)

Exh1-14

0609.05TP

(b)(5)

Issue Date: (b)(5)

Exh1-15

0609.05TP

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Issue Date:

(b)(5)

Exh1-16

0609.05TP

(b)(5)

Issue Date: (b)(5)

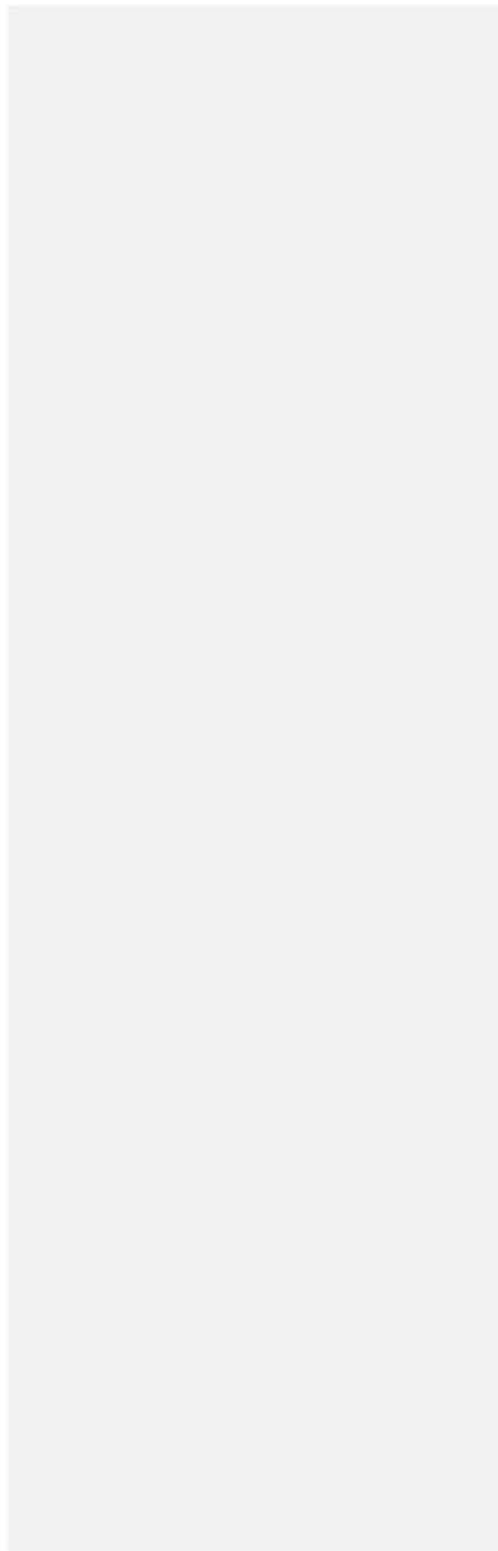
Exh1-17

0609.05TP

Issue Date: (b)(5)

Exh1-18

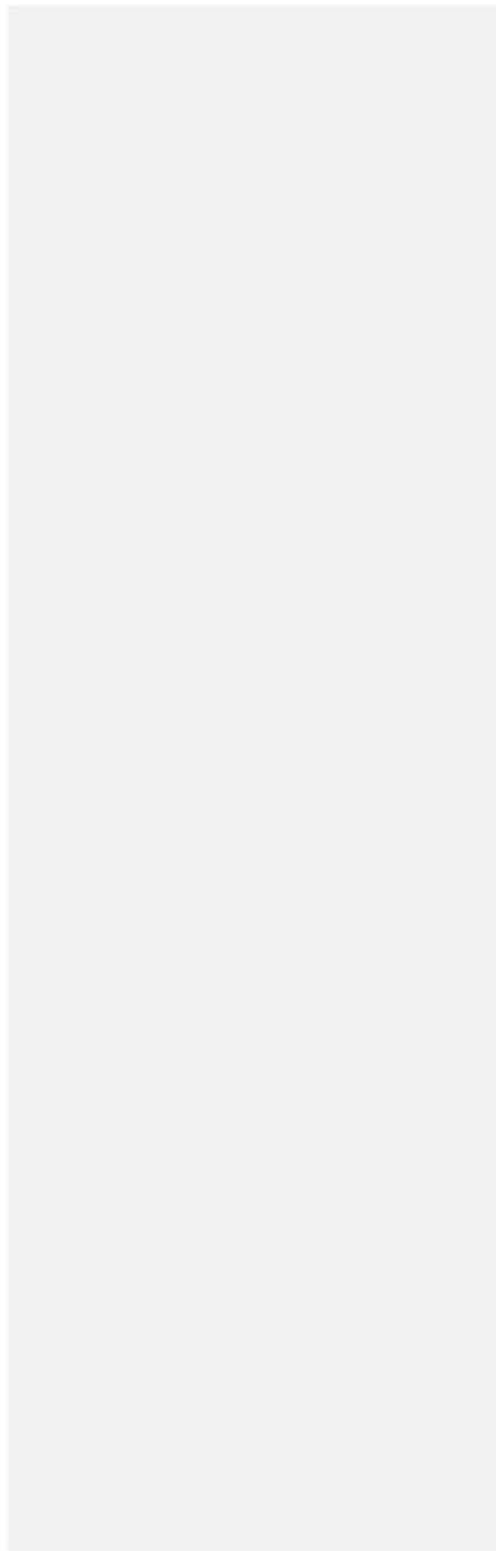
0609.05TP



Issue Date: (b)(5)

Att1-1

0609.05TP



**From:** [Kozak, Laura](#)  
**To:** [Mitman, Jeffrey](#)  
**Subject:** RE: Clinton Inop Both EDGs SD Pre SERP 09-13-18 (0).pptx  
**Date:** Wednesday, September 12, 2018 5:34:57 PM

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(b)(5)

Very good. One comment –

(b)(5)

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**From:** Mitman, Jeffrey  
**Sent:** Wednesday, September 12, 2018 6:29 PM  
**To:** Kozak, Laura <Laura.Kozak@nrc.gov>  
**Subject:** Clinton Inop Both EDGs SD Pre SERP 09-13-18 (0).pptx

Laura, this is what I have so far for tomorrow's meeting. I'll continue to work on it tonight/tomorrow prior to the discussion.

Jeff

**From:** [Kozak, Laura](#)  
**To:** [Mitman, Jeffrey](#)  
**Subject:** RE: Clinton Inop Both EDGs SD Pre SERP 09-13-18 (0).pptx  
**Date:** Wednesday, September 12, 2018 5:41:24 PM

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One other comment



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**From:** Mitman, Jeffrey  
**Sent:** Wednesday, September 12, 2018 6:29 PM  
**To:** Kozak, Laura <Laura.Kozak@nrc.gov>  
**Subject:** Clinton Inop Both EDGs SD Pre SERP 09-13-18 (0).pptx

Laura, this is what I have so far for tomorrow's meeting. I'll continue to work on it tonight/tomorrow prior to the discussion.

Jeff



**From:** [Kozak, Laura](#)  
**To:** [Hanna, John](#)  
**Subject:** RE: Clinton Questions.docx  
**Date:** Wednesday, September 12, 2018 8:46:49 AM

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They were Jeff's questions that Elba wrote up and we asked for DRS electrical help, which is why the DRS inspectors provided the answers.

(b)(5)

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**From:** Hanna, John  
**Sent:** Wednesday, September 12, 2018 8:44 AM  
**To:** Kozak, Laura <Laura.Kozak@nrc.gov>  
**Subject:** RE: Clinton Questions.docx

Laura,

I was confused by the document that was sent out. Who wrote it? Are these Jeff Mitman and your questions to the licensee? Not sure what it was... and the e-mail distribution didn't make sense to me either... if this related to the SDP issue.

John

---

**From:** Kozak, Laura  
**Sent:** Tuesday, September 11, 2018 3:59 PM  
**To:** Hafeez, Ijaz <[Ijaz.Hafeez@nrc.gov](mailto:Ijaz.Hafeez@nrc.gov)>; Dahbur, Alan <[Alan.Dahbur@nrc.gov](mailto:Alan.Dahbur@nrc.gov)>; Sanchez Santiago, Elba <[Elba.SanchezSantiago@nrc.gov](mailto:Elba.SanchezSantiago@nrc.gov)>; Stoedter, Karla <[Karla.Stoedter@nrc.gov](mailto:Karla.Stoedter@nrc.gov)>; Hanna, John <[John.Hanna@nrc.gov](mailto:John.Hanna@nrc.gov)>  
**Cc:** Daley, Robert <[Robert.Daley@nrc.gov](mailto:Robert.Daley@nrc.gov)>; Robbins, John <[John.Robbins@nrc.gov](mailto:John.Robbins@nrc.gov)>; Sargis, Daniel <[Daniel.Sargis@nrc.gov](mailto:Daniel.Sargis@nrc.gov)>  
**Subject:** RE: Clinton Questions.docx

Thank you! Very helpful.

Laura

---

**From:** Hafeez, Ijaz  
**Sent:** Tuesday, September 11, 2018 4:26 PM  
**To:** Dahbur, Alan <[Alan.Dahbur@nrc.gov](mailto:Alan.Dahbur@nrc.gov)>; Sanchez Santiago, Elba <[Elba.SanchezSantiago@nrc.gov](mailto:Elba.SanchezSantiago@nrc.gov)>; Stoedter, Karla <[Karla.Stoedter@nrc.gov](mailto:Karla.Stoedter@nrc.gov)>; Kozak, Laura <[Laura.Kozak@nrc.gov](mailto:Laura.Kozak@nrc.gov)>; Hanna, John <[John.Hanna@nrc.gov](mailto:John.Hanna@nrc.gov)>  
**Cc:** Daley, Robert <[Robert.Daley@nrc.gov](mailto:Robert.Daley@nrc.gov)>; Robbins, John <[John.Robbins@nrc.gov](mailto:John.Robbins@nrc.gov)>; Sargis, Daniel <[Daniel.Sargis@nrc.gov](mailto:Daniel.Sargis@nrc.gov)>  
**Subject:** Clinton Questions.docx

All,

Please call if you have additional questions.

Thanks

Note to requester: Attachments are non-responsive records due to clarifying the request to exclude licensee originated documents.

**From:** [Mitman, Jeffrey](#)  
**To:** [Kozak, Laura](#)  
**Cc:** [Kichline, Michelle](#)  
**Subject:** Clinton - Containment Failure  
**Date:** Thursday, September 13, 2018 6:20:48 AM  
**Attachments:** [PRA GG 01 001S01 R0.pdf](#)  
[Revised-DRE-Grand-Gulf 3-23-17-mark-up.docx](#)

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Jeff Mitman

**From:** [Mitman, Jeffrey](#)  
**To:** [Kozak, Laura](#)  
**Subject:** Clinton EDG Unavailability SERP jtm.docm  
**Date:** Thursday, September 13, 2018 3:15:01 PM  
**Attachments:** [Clinton EDG Unavailability SERP jtm.docm](#)

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Laura, attached is a version showing my comments in Word revision marks. The comments are very limited. None are significant, that is feel free to accept or reject them.

Jeff Mitman

EXHIBIT 1 – IFRB FINDING FORM

<u>IFRB Cover Sheet</u>	
<b>Facility Name/Location:</b> Clinton	<b>Name of Utility or Licensee:</b> Exelon
<b>Docket Number(s):</b> 50-461	<b>EA Number:</b> EA-18-104
<div style="border: 1px solid black; height: 500px; width: 100%;"></div>	

Issue Date: (b)(5)

Exh1-1

0609.05TP

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Issue Date: (b)(5)

Exh1-2

0609.05TP

(b)(5)

Issue Date: (b)(5)

Exh1-3

0609.05TP

(b)(5)



Issue Date:

(b)(5)



Exh1-4

0609.05TP



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Issue Date: (b)(5)

Exh1-5

0609.05TP

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Issue Date: (b)(5)

Exh1-6

0609.05TP

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Issue Date: (b)(5)

Exh1-7

0609.05TP

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Issue Date: (b)(5)

Exh1-8

0609.05TP

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Issue Date: (b)(5)

Exh1-9

0609.05TP

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Issue Date:

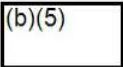
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Exh1-10

0609.05TP

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Issue Date: 

Exh1-11

0609.05TP

(b)(5)

Issue Date: (b)(5)

Exh1-12

0609.05TP



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Issue Date: (b)(5)

Exh1-13

0609.05TP

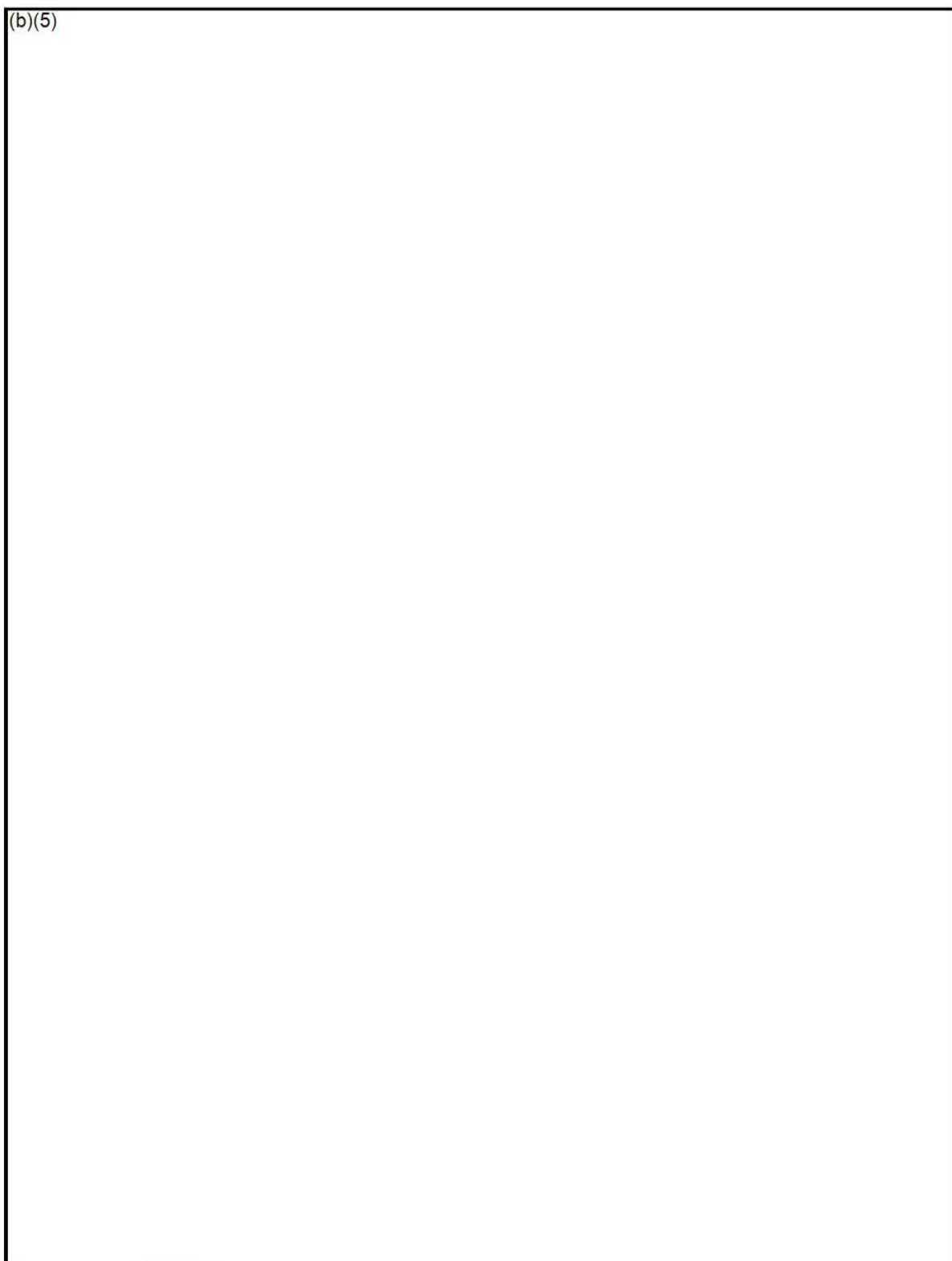
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Issue Date: 

Exh1-14

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Issue Date: (b)(5)

Exh1-15

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Issue Date: (b)(5)

Exh1-16

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Issue Date: (b)(5)

Exh1-17

0609.05TP

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Issue Date: (b)(5)

Exh1-18

0609.05TP

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Issue Date: (b)(5)

Exh1-19

0609.05TP

Issue Date: (b)(5)

Att1-1

0609.05TP



**From:** [Mitman, Jeffrey](#)  
**To:** [Kozak, Laura](#)  
**Subject:** Clinton Inop Both EDGs SD Pre SERP 09-13-18 (1).pptx  
**Date:** Thursday, September 13, 2018 7:57:12 AM  
**Attachments:** [Clinton Inop Both EDGs SD Pre SERP 09-13-18 \(1\).pptx](#)

---

Laura, here is the presentation I'll be using.

I will not distribute the last slide but I will speak to it during the discussion.

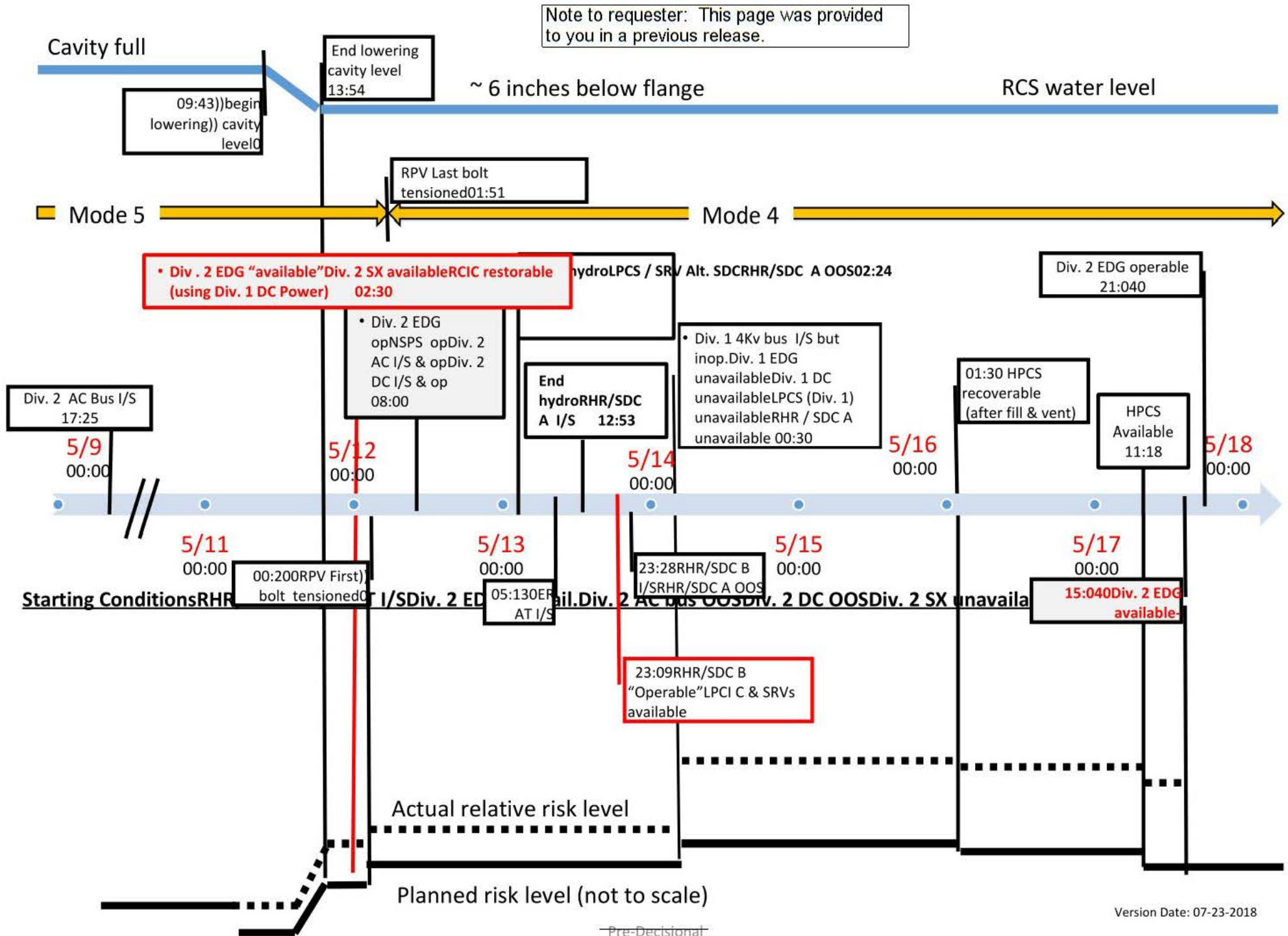
Jeff

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Pre-Decisional

Note to requester: This page was provided to you in a previous release.



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Pre-Decisional

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Pre-Decisional

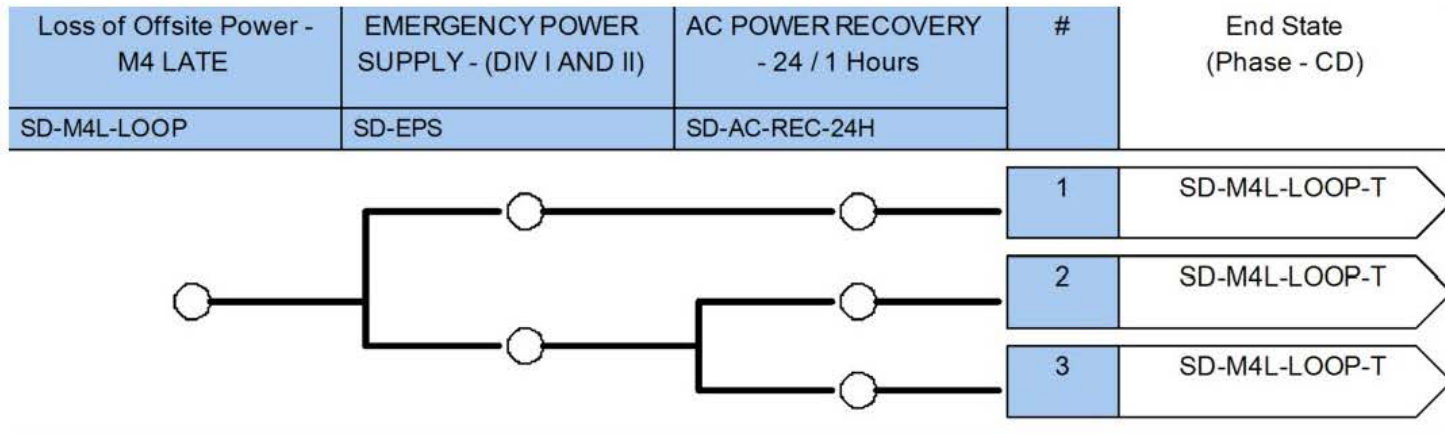
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Pre-Decisional

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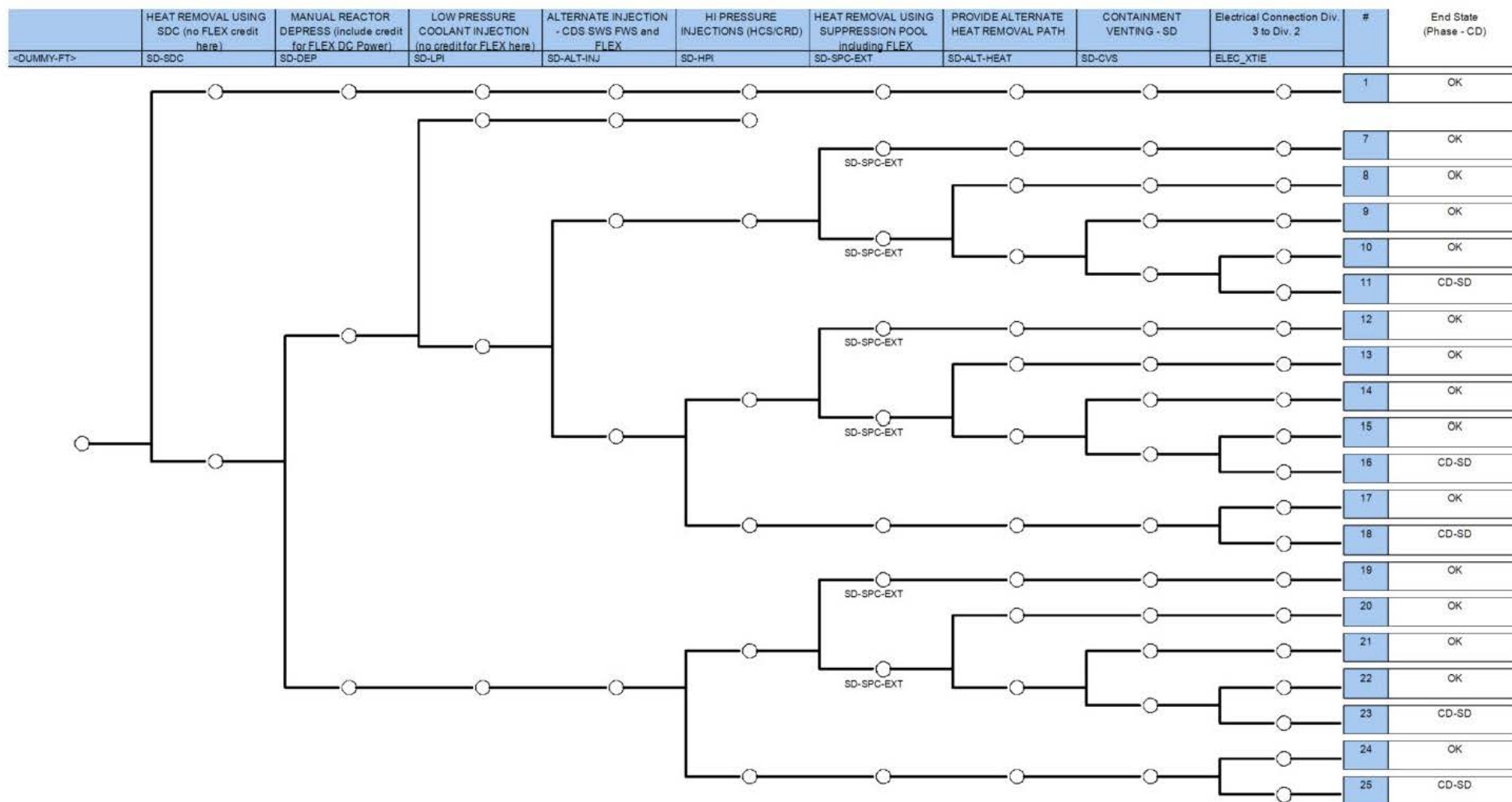
Pre-Decisional

# Shutdown LOOP ET



Pre-Decisional

# Shutdown LOOP ET (cont.)



Pre-Decisional



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Pre-Decisional

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Pre-Decisional

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Pre-Decisional

**From:** [Mitman, Jeffrey](#)  
**To:** [Kozak, Laura](#)  
**Cc:** [Fong, CJ](#)  
**Subject:** Clinton Inop. Both EDGs SD Pre SERP 09-13-18 (1).pptx  
**Date:** Thursday, September 13, 2018 10:35:36 AM  
**Attachments:** [Clinton Inop Both EDGs SD Pre SERP 09-13-18 \(1\).pptx](#)

---

Laura, here are the final slides that were used (I did correct to typos that the meeting found).

HQ would like to move forward with the SERP next week so that we can make the required due dates / milestones.

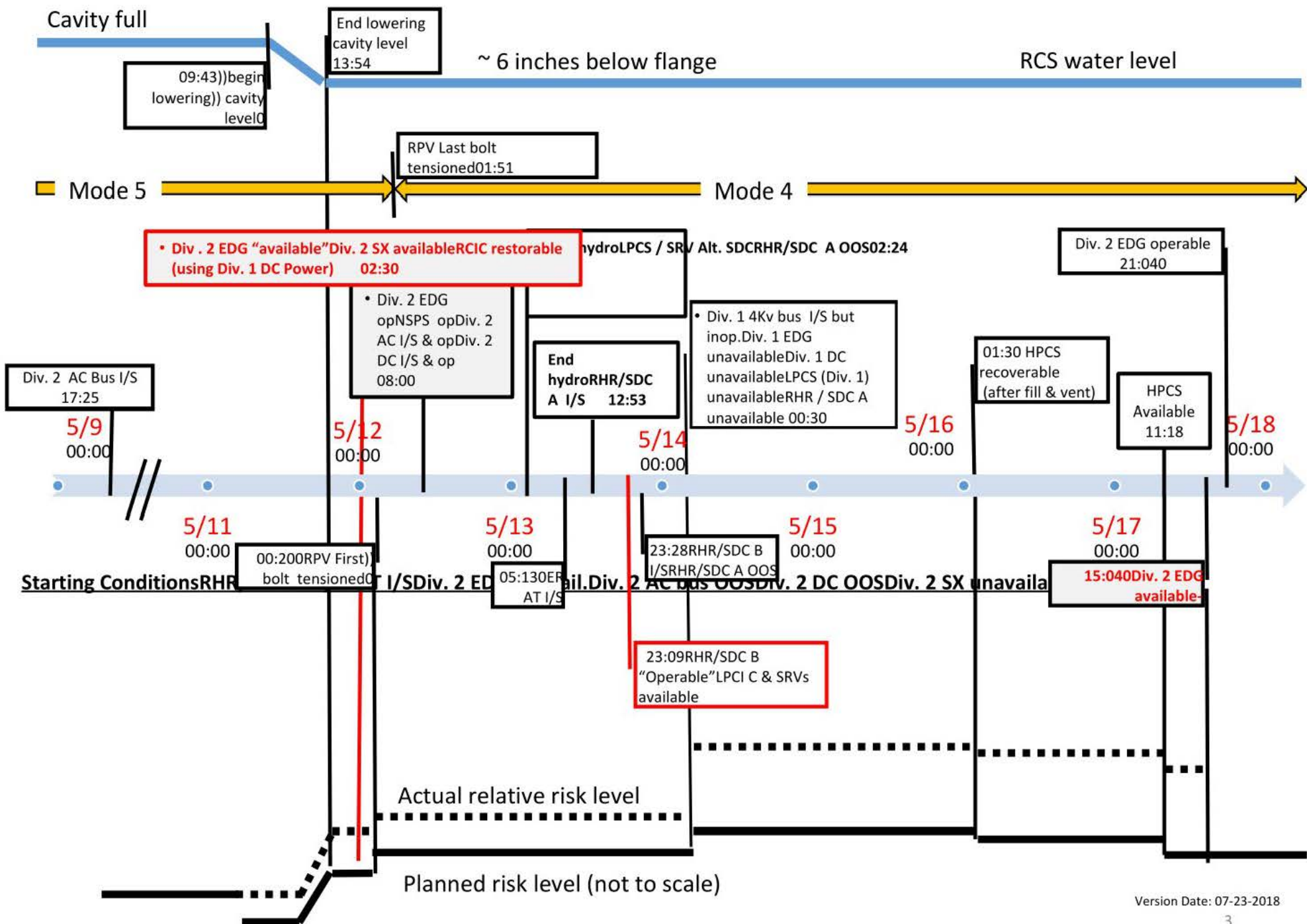
They want a list of known conservatisms and non-conservatisms. They also like to see sensitivities.

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Jeff Mitman

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# Detailed Risk Assessment (DRE)

## Approach (cont.)

- Unavailability spans from cavity flooded to water at flange (Mode 5 – refueling) to head on and tensioned (Mode 4 – cold shutdown) including reactor pressure vessel (RPV) hydroMost of risk is expected to come from ~3.5 day period in cold shutdown when – DRE currently only evaluates this portion of outageDiv. 1 & 2 EDG were unavailableHPCS pump unavailable for most of period but was recoverableTime to boil (TTB) was about 4 hours Time to core uncover (TTCU) at low pressure approximately 24 hoursTime to core uncover (TTCU) at high pressure approximately 10 hoursContributing risk factor: During this 3.5 day period, RPV let down to radwaste was in service via Div. 2 of residual heat removal (B RHR)If LOOP occurs, B RHR pump will stop but let down will continue at a reduced flow rateThus if letdown is not secured, loss of inventory (LOI) event occursBecause cues are clear and procedures are precise, risk contribution is expected to be low and therefore ignored

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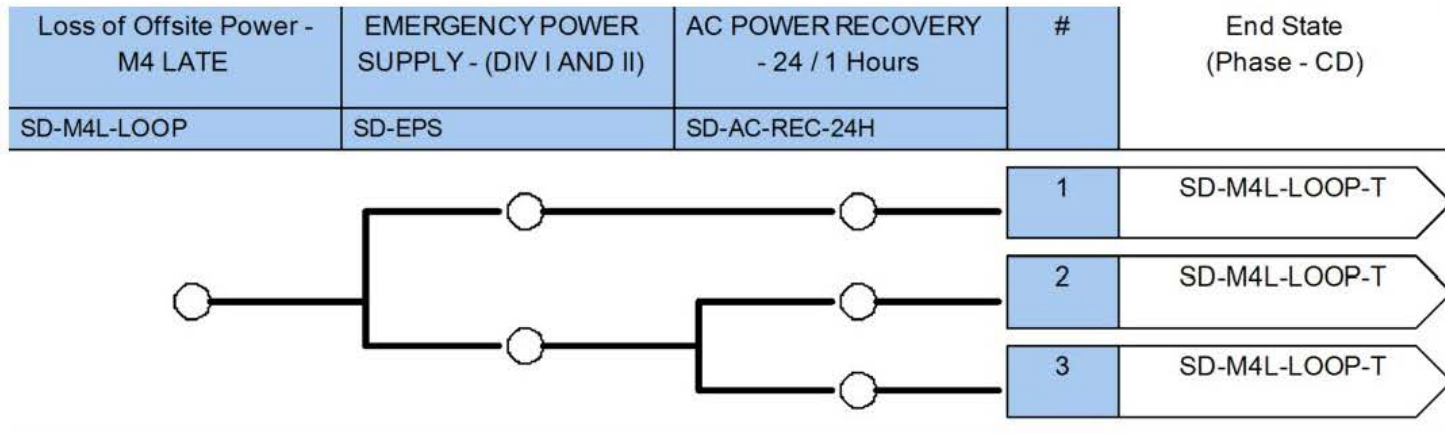
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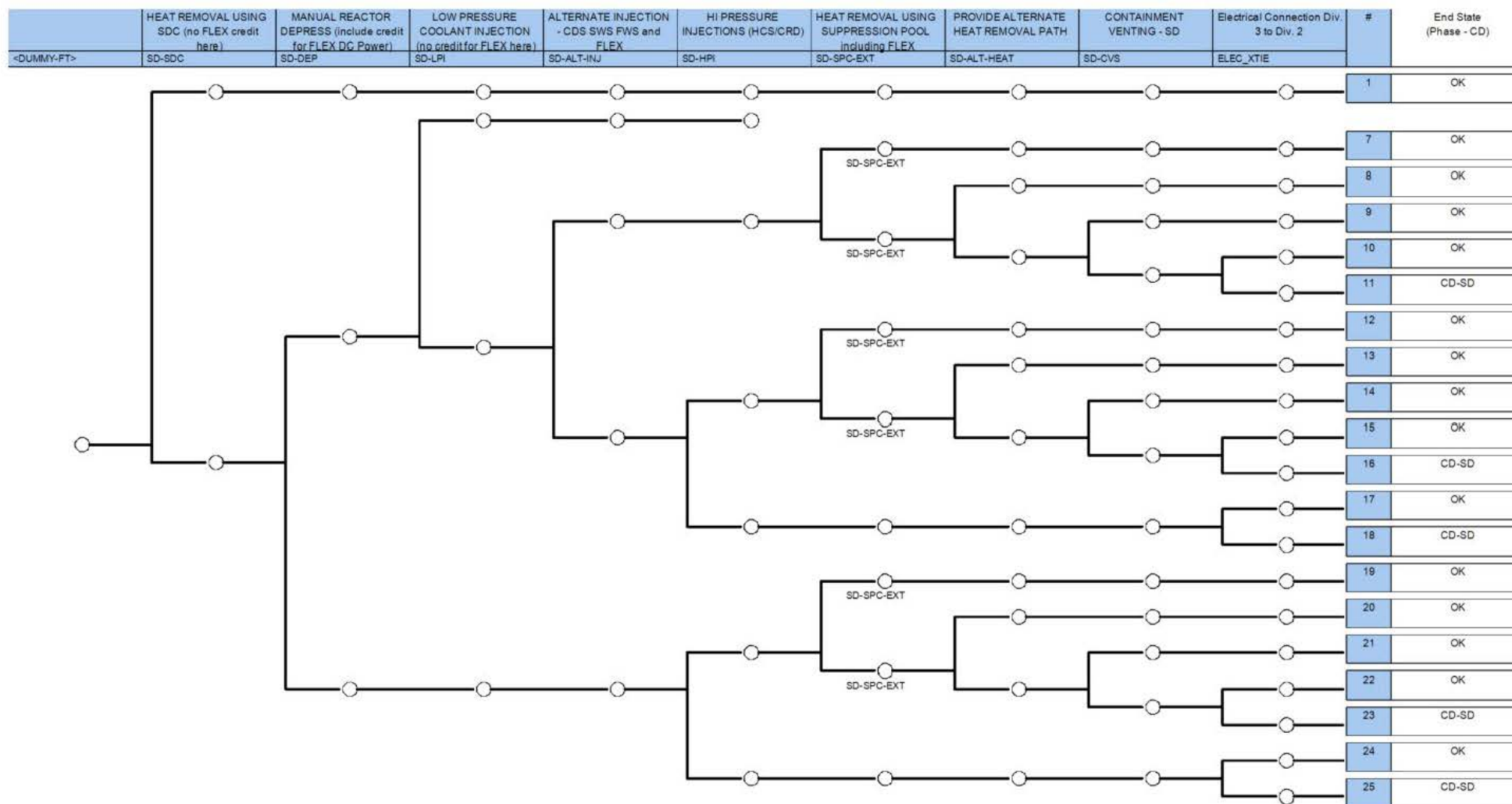
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# Shutdown LOOP ET



# Shutdown LOOP ET (cont.)



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**From:** [Kozak, Laura](#)  
**To:** [Louden, Patrick](#); [Stoedter, Karla](#)  
**Cc:** [Lara, Julio](#); [Hanna, John](#); [Sanchez Santiago, Elba](#); [Sargis, Daniel](#)  
**Subject:** Clinton SDP  
**Date:** Thursday, September 13, 2018 10:44:30 AM  
**Attachments:** [Clinton Inop Both EDGs SD Pre SERP 09-13-18 \(1\) \(003\).pptx](#)

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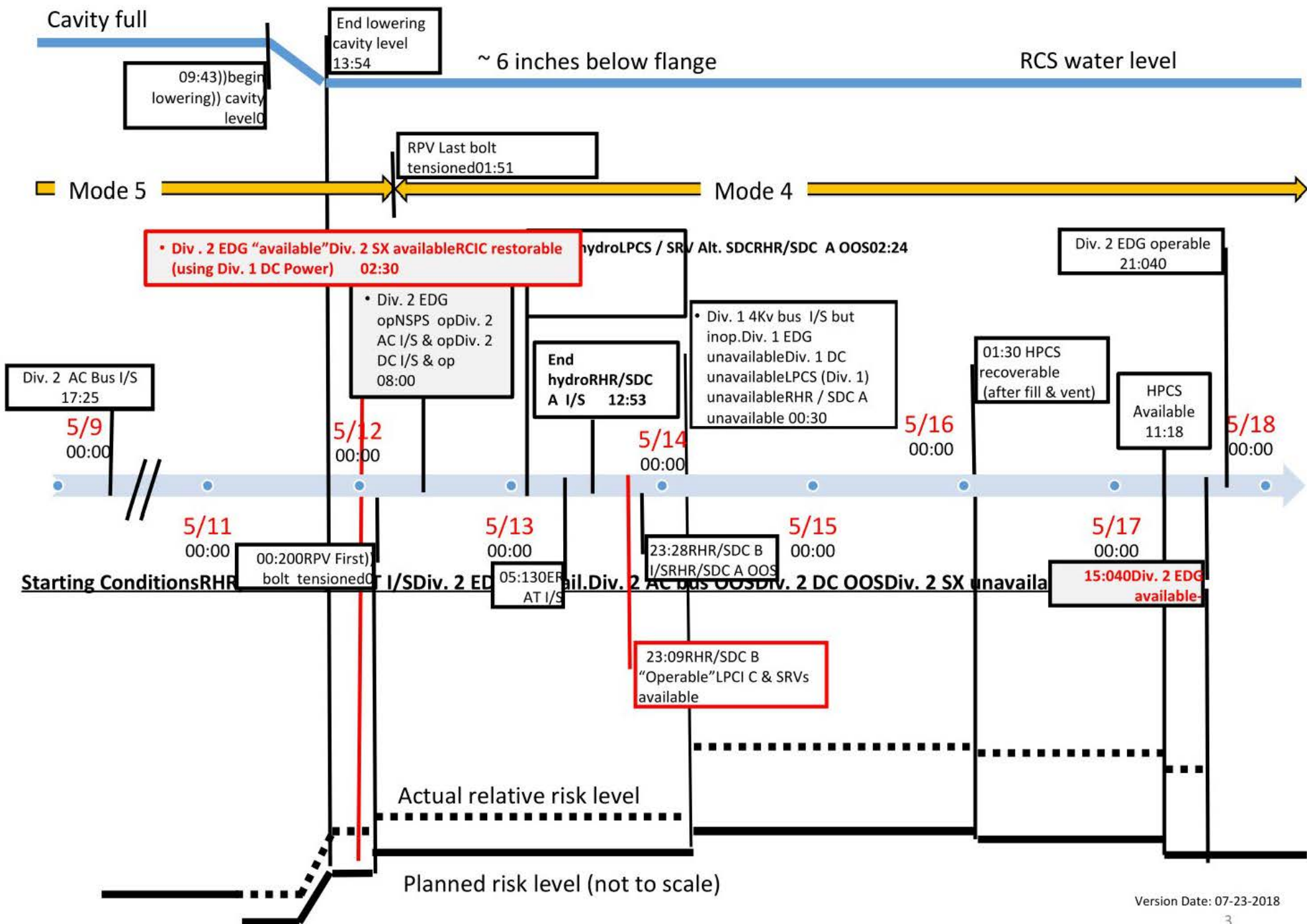
FYI

Jeff briefed NRR management today. His presentation is attached.

Laura

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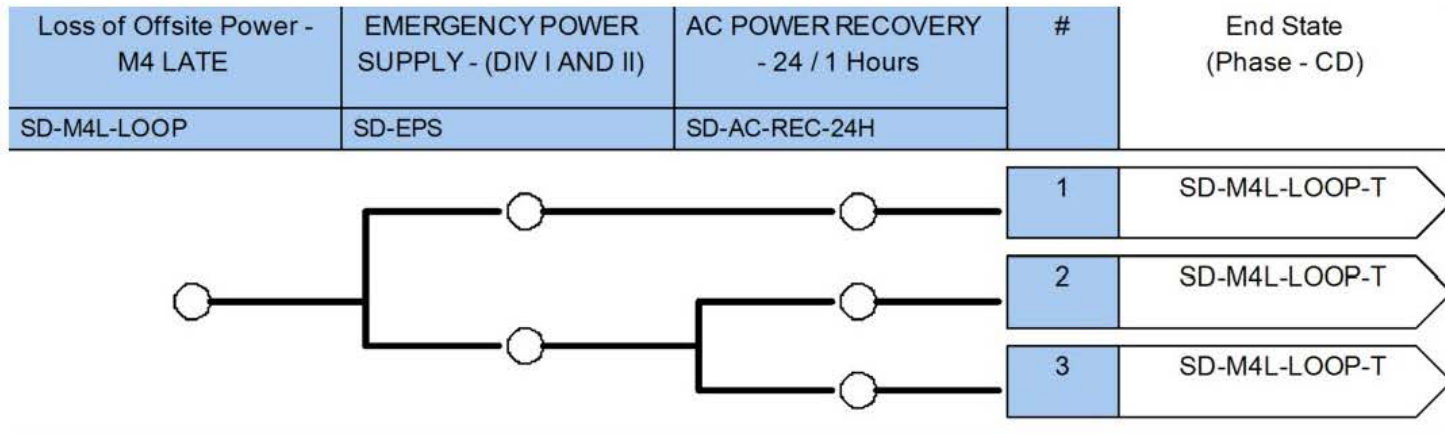
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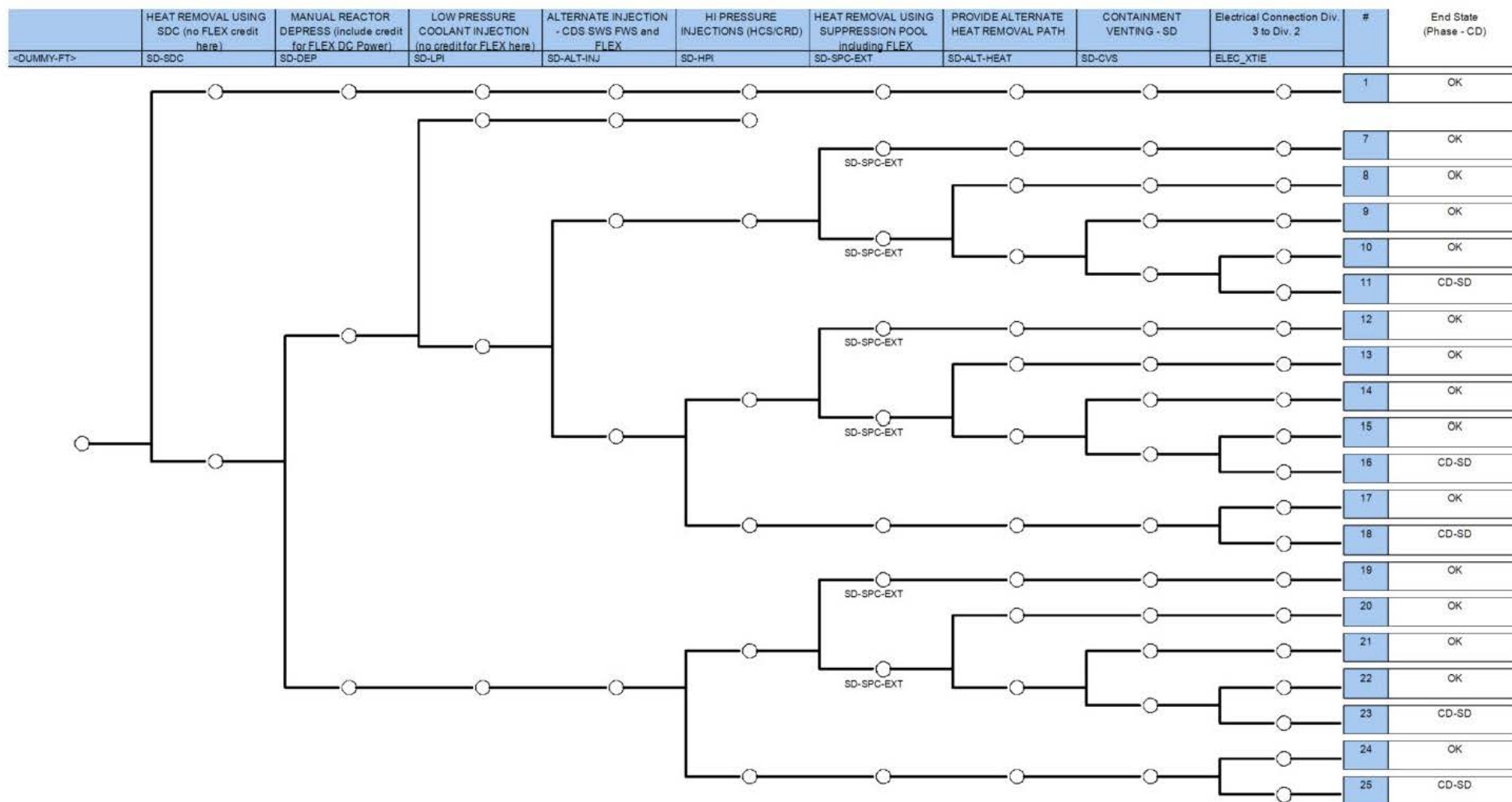
(b)(5)

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# Shutdown LOOP ET



# Shutdown LOOP ET (cont.)





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Note to requester: Attachment is a non-responsive record due to clarifying the request to exclude licensee originated documents.

**From:** [Kozak, Laura](#)  
**To:** [Mitman, Jeffrey](#)  
**Subject:** Fw: Procedures changes as a result of SDP eval for DG  
**Date:** Wednesday, November 28, 2018 11:02:34 AM  
**Attachments:** [AR 4198001.pdf](#)

---

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**From:** Sanchez Santiago, Elba  
**Sent:** Wednesday, November 28, 2018 10:58 AM  
**To:** Kozak, Laura  
**Subject:** Procedures changes as a result of SDP eval for DG

Laura,

(b)(5)

Just wanted to share this with you for FYI purposes. Let me know if you have any questions.

Thanks,  
Elba

**From:** elba.sanchezsantiago@nrc.gov [mailto:elba.sanchezsantiago@nrc.gov]  
**Sent:** Friday, November 30, 2018 5:46 AM  
**To:** Sanchez Santiago, Elba <Elba.SanchezSantiago@nrc.gov>  
**Subject:**