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MICHIGAN'S PROGRESS**

Palisades Nuclear Plant: 27780 Blue Star Memorial Highway, Covert, MI 49043

50-255

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I have reviewed most of Revision 0 of the CE Restructured Technical Specifications. I did not review the "Digital" instrumentation chapter, and LCOs for which Palisades has no comparable system were reviewed mostly for structure and form, since I am not familiar with the system details. I have arranged my comments into categories, as you suggested, rather than by chapter. I think the general comments are: 1) I think that the final product is quite good, and 2) most of the detailed comments are on slight wording differences between chapters which are only consistency issues. The comments are attached.

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COMMENTS ON CE RESTRUCTURED TECHNICAL SPECIFICATIONS

I. Technical issues

- A. LCO 3.0.3 is the only LCO or SR in section 3.0 which contains an applicability statement. The way the existing statement is worded, it raises the question "when are the others applicable? I suggest changing the subject wording to: "LCO 3.0.3 is only applicable in MODES 1, 2, 3, and 4." or possibly to: "LCO 3.0.3 is not applicable in MODES 5 or 6." The statement "LCO 3.0.3 is applicable in MODES 1, 2, 3, and 4." does not actually provide any information about its applicability in Modes 5 or 6. Certainly it implies that LCO 3.0.3 is not applicable in those Modes, but it would be more explicit if the word "only" was added or if the negative form was used.
- B. LCO 3.1.1: If boration to restore SDM cannot be accomplished, a 3.0.3 entry would impose a cooldown requirement. In this situation, a cooldown would further aggravate the problem of insufficient SDM.
- C. LCO 3.1.5: The definition of "Group Position" is unclear, each CEA position is measured, and the position of the selected CEA is displayed. It is possible to have the positions of two CEAs in a group differ by more than [15] inches, but, unless all CEAs in a group but one were at the same position, it would be difficult to say where the "group" itself was. as an example, if one CEA in a group was at 100 inches, two at 116 inches, and the balance in between, Condition A would certainly apply, but it is unclear as to whether Condition E would apply. In short, there is really no such thing as group position, and it should not be referenced. The group position used for the PDIL (LCO 3.1.7) is simply the position of the selected, or "target" CEA. The CEA position deviation alarm assures that the operators are alerted if the extreme spread between positions within a group exceed the alarm setpoint. The analysis assume that the rods are inserted below the PDIL by the distance used for the deviation setpoint.
- D. Part Length Rod positioning is not addressed by section 3.1, or any other section.
- E. SR 3.311.2, channel cal for PAM Inst, needs a note stating that "Neutron detectors are excluded from CHANNEL CALIBRATION."
- F. LCO 3.4.10 (and 3.7.1) Does the stated applicability agree with the B&PV code requirement?
- G. SR 3.4.10.1: The statement that "Following testing, lift settings shall be within $\pm 1\%$." is unclear. Does this mean that they may be outside the specified band by 1%? (In this case the required settings could then be stated to be 2500 psia $\pm 2\%$.) This same statement is made in SR 3.7.1.1, where the valve settings are individually stated, and it therefore is more precise. The statement, in either case should state to what the percentage applies. I suggest that in each case either 1) the settings be specified for each valve (or group of valves with the same requirements) and the subject statement be extended to read: "Following testing, lift settings shall be within $\pm 1\%$ of the required setting.", or 2) an allowable band be stated for each valve (or group of valves having the same requirements).
- H. LCO 3.4.12: Conditions E and F are differentiated by Mode. The guidance given in the follow up letters to GL 90-06 states that the intended differentiation

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was whether there was a bubble in the pressurizer or not.

- I. LCO 3.4.12: There are no SRs for the cycling of PORVs and Block valves as required by GL 90-06.
- J. LCO 3.6.3, Required Action E.3: This test is difficult or impossible to perform during operation. If the inner valve is leaking, the outer valve can only be tested by installing a blind flange inside the containment. In our plant, that cannot be accomplished at power. If the outer valve is leaking, there is no qualified valve or piping down stream to allow testing of the inner valve.
- K. LCO 3.6.4, completion time for Action A.1: This time should be 8 hours, as for LCO 3.6.5, Action A.1. The associated Condition, pressure not within limits, occurs most often due to containment temperature increases. The proper correction is to reduce temperature, not necessarily to vent the containment. As recognized in LCO 3.6.5, temperature excursions cannot be corrected quickly. Since the safety impact is similar, for either temperature or pressure (or both) being above the limit, I suggest that both completion times be 8 hours. This problem is more apparent at plants which do not credit automatic closure of the purge valves, and therefore do not open them when containment integrity is required.
- L. LCO 3.7.2: The term "deactivated", used in the applicability, is not explained in the bases. It is not clear how to apply this term to different sorts of MSIV actuators.
- M. LCO 3.7.3: The term "deactivated", used in the applicability, is not explained in the bases. It is not clear how to apply this term to different sorts of MFIV actuators.
- N. LCO 3.7.14: It appears that a "LCOs 3.0.3 and 3.0.4 are not applicable" note would be appropriate for this LCO (at least for plants who do not use the MODE 1, 2, 3, and 4 applicability) because Plant operating conditions neither add to nor detract from the effects of a fuel handling accident in the fuel storage building.
- O. LCO 3.7.16: It appears that a "LCO 3.0.4 is not applicable" note would be appropriate for this LCO because Plant operating conditions neither add to nor detract from the effects of a fuel handling accident in the fuel storage building.
- P. LCO 3.7.17: It appears that a "LCO 3.0.4 is not applicable" note would be appropriate for this LCO because Plant operating conditions neither add to nor detract from the effects of an inadvertent criticality accident in the fuel storage building.
- Q. LCO 3.7.18: It appears that a "LCO 3.0.4 is not applicable" note would be appropriate for this LCO because Plant operating conditions neither add to nor detract from the effects of an inadvertent criticality accident in the fuel storage building.
- R. SR 3.8.2.1: This SR statement excepts two LCO 3.8.1 SRs and also has a note which states that a long list of LCO 3.8.1 SRs are not required. I find this confusing. Is there some difference intended from simply stating which 3.8.1 SRs are required (as is done for LCO 3.5.3)? There are 13 out of 20 which are

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not required, making it shorter as well as clearer to list those which are required.

- S. SR 3.8.2.1: The 3.8.1 SRs which are required (those not excepted) both include SRs which I would not expect to be required, and exclude SRs which I would expect to be required. The selection of those SRs which are required is judgmental, but since there is a chance that the list is not what was intended, I will list my observations.
1. SR 3.8.1.3 (60 min load test) is excepted when the ability to carry a load is just as important for an operable DG whether cold or hot.
 2. SR 3.8.1.7 (10 sec. start) is included, when no specific credit is taken for any particular starting time. Would not 12 seconds or 22.8 seconds be just as good, as far as analysis is concerned? What is the basis for 10 seconds when cold? With the RCS cold, there is plenty of time for manual starting and loading of necessary equipment.
 3. SR 3.8.1.12 (Starting & loading on an ESF signal w/o LOSP) is required. Most ESF signals, however are not required to be operable under these conditions.
 4. SR 3.8.1.14 (24 hour load test) is excepted when the ability to carry a load is just as important for an operable DG whether cold or hot.
 5. SR 3.8.1.16 (Transfer of load from DG to Offsite) is excepted, but seems just as important cold or hot.
- T. SR 3.8.4.8 (60 month Battery capacity test) requires annual testing of old or degraded batteries. This would require an extra plant shutdown for most units. That seems contrary to the overall safety goal. I suggest an 18 month frequency unless there is analytical, rather than judgmental, basis for the annual testing.
- U. SR 3.8.5.1: This SR, like SR 3.8.2.1, is confusing in that it gives a list of applicable SRs from 3.8.4, and a different list of 3.8.4 SRs which are not required. If this treatment is supposed to convey something other than a list of required SRs, it needs to be explained, otherwise just list the 3.8.4 SRs which are required as is done in LCO 3.5.3.
- V. SR 3.8.6.2: The two special requirements in the frequency column seem to use similar terms differently.

In my experience, the idea of a "battery discharge < [110] V" clearly implies an event where the battery became sufficiently discharged that its no load terminal voltage dropped below 110 Volts.

Applying that idea to a "battery overcharge > [150] V" implies that a battery can be overcharged sufficiently to raise its no load terminal voltage significantly above its full charge value. I do not believe that to be true. Experience with automobile and submarine batteries tells me that a continued over charge produces excessive gassing and heating, and electrolyte loss, but that it is physically impossible to continue to raise the potential between the plates once the chemical process has been driven to completion. Is the "battery overcharge > [150] V" possibly referring to the bus voltage exceeding 150 Volts

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during a charge, thereby being a limit on the charging rate?

- W. LCO 3.9.2, Conditions A and B should have the word "required" inserted before "SRM". Several plants have four channels of SRMs and could, therefore, have both two SRMs operable (thus meeting the LCO) and two SRMs inoperable (thus having Conditions A and B apply).

- X. LCOs 3.1.4 (MTC), 3.4.2 (T_{avg} when critical), 3.4.4 (RCS Loops, MODES 1 & 2) and 3.7.19 (Secondary Activity) provide only a shutdown Action. In those cases where a "Restore" Action is to be an option, the Required Actions (in 3.4.2 for example) need to be:
 - A.1 Restore T_{ave} to within limits.

 - OR

 - A.2 Be in MODE 3.

Otherwise the entry into such a Condition can be construed to be reportable under 10 CFR 50.72 as "a shutdown required by Tech Specs". A similar situation occurred at Palisades, where the LCO compliance was restored almost immediately and well prior to the termination of the completion time. A shutdown was not initiated, however, our Resident Inspector felt strongly that the event was reportable. The fact that an actual shutdown was not initiated, in our case, did not sway the issue.

II. Comments on LCO 3.4.14 (PIV Leakage):

A. LCO Actions Note 1:

The note allows separate Condition entry for each flow path, rather than for each PIV. It appears that this wording may have been chosen to allow the Actions to apply multiple leaking PIVs in different flow paths, but to disallow multiple leaking PIVs in the same flow path. If that is so it is far to subtle. If not, why not use the simpler wording "Separate Condition entry is allowed for each PIV." and let the RCS operational leakage LCO apply if there is actual flow through the path?

B. LCO Actions Note 2:

Note 2, according to its basis comments, was included in case the leakage through a PIV make another required system or component inoperable. It is much more likely that the system or component would be made inoperable by Required Action A.1, A.2, or C.1.

C. Note for Required Action A.1 & A.2:

The words "on the RCS pressure boundary" are unclear to me. I suggest that they be changed to "within the RCS pressure boundary" (as was done in the basis) or to (my own preference) "in the high pressure portion of the piping".

D. Actions A.1, A.2 (the first), and C.1:

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The use of the term "automatic valve" is unclear. Is this intended to mean a valve which is actuated by an automatic signal, such as a safety injection motor operated valve or a containment isolation valve; or is it intended to mean a power operated valve, whether actuated automatically or actuated manually by remote means, such as a shutdown cooling suction valve?

E. Actions A.1 and A.2

1. During the plant conditions under which this LCO is applicable, the loop check valves and HPSI or LPSI valves are closed, as are both SDC suction valves. Therefore Action A.1 is normally automatically completed if any one of these PIVs were found to be leaking (with the exception of deactivating a SDC suction valve if the other should be leaking).
2. The deactivation of ECCS or SDC motor operated valves is, in my opinion, contrary to safety. The ECCS automatic valves typically open to admit cooling fluid in response to a low pressure signal; the low pressure condition would eliminate or reduce the concern for a leaking PIV. The requirement to deactivate a SDC suction valve (if these are included in the intended class of automatic valves) also seems imprudent, as discussed in F.3 below, with respect to Action C.1.

F. Condition C & Action C.1:

1. Condition C refers to equipment which is not required by the LCO. There appears to be no reason to enter the Condition, whether the interlock works or not (LCO 3.0.2 requires complying with Required Actions only when the LCO is not met). The SDC interlock is related to PIV leakage only by the general function of preventing overpressurization of low pressure piping; it is evident that the interlock Actions were added to the PIV LCO simply because they fit nowhere else. Do these interlocks fit any of the criterion for inclusion? If the interlock requirements are to be retained, the LCO needs to be modified.
2. The part of the interlock which closes the valves automatically is of questionable desirability; it might avoid a potential overpressurization, but it provides an opportunity for a loss of decay heat removal. It is difficult to believe that these valves (typically motor operated) could close quickly enough to protect against a pressure transient. Such protection is part of the LTOP design, at least for the Palisades unit.
3. The requirement to isolate the affected penetration should certainly not be effective during SDC operations, where it would guarantee a loss of decay heat removal. The requirement to deactivate the SDC system, for want of this interlock, seems imprudent under any conditions. The SDC system is needed, as the final heat removal system, following all normal shutdowns and following all but post LOCA emergency shutdowns.

G. SR 3.4.14.1

1. Note 2: This note is not needed; it restates what is already contained in the Applicability statement.
2. SR wording: While there has been an effort to limit the numbers of tables in the Tech Specs, it might be desirable to utilize a table of valves and

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their leakage limit for this LCO & SR.

3. SR 3.4.14.1, Frequency (the second): Change to the more standard wording (eliminating the redundant words) "Prior to MODE 2 entry when the unit has been in MODE 5 for ≥ 7 days in not performed within 9 months"
4. SR 3.4.14.1, Frequency (the second):
 - a. I believe that "action" in the 5th line was intended to be "actuation".
 - b. Testing a PIV requires a containment entry at some plants; testing at power may not be possible. The test following each use requirement should apply only when such testing would not require a shutdown. In addition, testing may make an associated system inoperable, so that testing following each use may cause an increase in risk rather than a decrease.

III. Consistency issues:

A. Listing of Definitions:

Ten definitions provide abbreviations or symbols, Nine are in the form "NAME (symbol)", and are alphabetized by name. One (E) is in the form "Symbol - NAME", and is alphabetized by the symbol. They should all be alphabetized by name, and be in the same form.

B. There are several variants of each of the typical notes used in an SR box:

1. SRs not required to be performed prior to . . .
 - a. SR 3.1.3.1: "This Surveillance is not required to be performed prior to entry into MODE 2."
 - b. SR 3.1.4.1: "This Surveillance is not required to be performed prior to entry into MODE 2."
 - c. SR 3.1.4.2: "This Surveillance is not required to be performed prior to entry into MODE 1 or 2."
 - d. SR 3.1.7.1: "This Surveillance is not required to be performed prior to entry into MODE 2."
 - e. SR 3.2.1.2: "Not required to be performed below 20% RTP."
 - f. SR 3.2.1.3: "Not required to be performed below 20% RTP."

I suggest deleting the "This Surveillance is" of 3.1.3.1, 3.1.4.1, 3.1.4.2, and 3.1.7.1, and replacing the "below" of 3.2.1.2 and 3.2.1.3 with the "<" symbol.

2. SRs not required to be performed until . . .
 - a. Example 1.4-3: "Not required to be performed until 12 hours after \geq

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25%RTP.

- b. SR 3.3.1.2: "Not required to be performed until 12 hours after THERMAL POWER is \geq [20]% RTP."
- c. SR 3.3.1.3: "Not required to be performed until 12 hours after THERMAL POWER is \geq [20]% RTP."
- d. SR 3.4.1.4: "Not required to be performed until [24] hours after \geq [90]% RTP."
- e. SR 3.4.13.1: "Not Required to be performed in MODE 3 or 4 until 12 hours of steady state operation." (There is also a similar note in the frequency column. Are both necessary?)
- f. SR 3.4.16.2: "Not required to be performed until 31 days after . . ."

I suggest deleting the "THERMAL POWER IS" of 3.3.1.2 and 3.3.1.3, since it is easily inferred and usage would then follow the example of section 1.4.

3. SRs only required under special conditions:

- a. SR 3.2.1.1: "Only applicable when the Excore Detector Monitoring System is being used to determine LHR."
- b. SR 3.2.1.2: "Only applicable when the Incore Detector Monitoring System is being used to determine LHR."
- c. SR 3.2.1.3: "Only applicable when the Incore Detector Monitoring System is being used to determine LHR."
- d. SR 3.4.1.3: "Required to be met in MODE 1 with all RCPs running."
- e. SR 3.4.3.1: "Only required to be performed during RCS heatup and cooldown operations and RCS inservice leak and hydro testing."
- f. SR 3.4.11.1: "Not required to be performed with block valve closed in accordance with the Required Actions of this LCO."
- g. SR 3.4.12.3 "Required to be performed when complying with LCO 3.4.12b."
- h. SR 3.4.16.1: "Only required to be performed in MODE 1."
- i. SR 3.5.4.1: "Only required to be performed when ambient air temperature is $< 40^{\circ}\text{F}$ or $> 100^{\circ}\text{F}$."

I suggest addition of a leading "Only" to 3.4.1.3 & 3.4.12.3.

C. Special SR Frequencies:

Special SR frequencies, which are not totally unique, are listed below. I have made some suggestions with regard to consistency. Those notes which do not have any suggested changes are listed for comparison. In addition to the suggested

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changes, I suggest that the use of (or lack of) "Once" be more consistent. Usage appears somewhat random in the current version.

- a. SR 3.1.3.1: "Prior to entering MODE 1 after fuel loading"
(Suggest: "Prior to entering MODE 1 after each fuel loading" as in 3.1.4.1.)
- b. SR 3.1.4.1: "Prior to entering MODE 1 after each fuel loading"
- c. SR 3.1.4.1: "Each fuel cycle within . . ." (two places)
- d. SR 3.1.5.7: "Prior to reactor criticality after each removal of the reactor head"
(Suggest: "Prior to criticality after each removal of the reactor vessel head". Compare with 3.4.2.1.)
- e. SR 3.1.8.2: "Within [7 days] prior to . . ."
- f. SR 3.2.2.1: "Once prior to operation above 70% RTP after each fuel loading"
(Suggest: "Once prior to operation > 70% RTP after each fuel loading". Compare with 3.2.3.1.)
- g. SR 3.2.3.1: "Prior to operation > 70% RTP after each fuel loading"
- h. SR 3.3.1.6: "Once within 7 days prior to each reactor startup"
- i. SR 3.3.1.7: "Once within 92 days prior to each reactor startup"
- j. SR 3.3.3.2: "Once within 7 days prior to each reactor startup"
- k. SR 3.3.4.3: "Once within 92 days prior to each reactor startup"
- l. SR 3.4.2.1: "Within 15 minutes prior to achieving criticality"
(Suggest: "Within 15 minutes prior to criticality". Compare with 3.1.5.7.)
- m. SR 3.4.14.1: "Prior to entering MODE 2 whenever the unit has been in MODE 5 for 7 days or more, if leakage testing has not been performed in the previous 9 months"
(Suggest: "Prior to entering MODE 2 whenever the unit has been in MODE 5 or 6 for > 7 days, if not performed within 9 months". Compare with 3.6.3.4 and 3.7.5.5.)
- n. SR 3.4.17.2: "12 hours prior to initiating startup or PHYSICS TESTS"
(Suggest: "Within 12 hours prior to initiating startup or PHYSICS TESTS".)
- o. SR 3.5.1.4: "Once within 6 hours after . . ."

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- p. SR 3.6.3.4 (and 3.6.3 Action E.2): "Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days . . ."
(Suggest: "Prior to entering MODE 4 from MODE 5 if not performed within 92 days . . ." Compare with 3.4.14.1.)
- q. SR 3.6.3.6: "Within 92 days after opening the valve"
- r. SR 3.7.5.5: "Prior to entering MODE 2 whenever the unit has been in MODE 5 or 6 for > 30 days"
- s. SR 3.7.18.1: "Prior to storing the fuel assembly in [Region 2]"
- t. SR 3.8.1.2: "As specified in Table 3.8.1-1"
(Suggest: "In accordance with Table 3.8.1-1" as is done in all other instances of similar 'in accordance with' notes.)
- u. SR 3.8.6.2: "Once within 24 hours after . . ." (two places)

D. Placement of special limitations in applicability instead of using notes in SR:

- a. LCO 3.4.2 has a very complex applicability to limit the need to complete the SR during inappropriate conditions, where other LCOs (3.2.1 and 3.4.3 in particular, in addition to those listed above) put such notes in the SR.

I suggest that the applicability of LCO 3.4.2 be "MODE 1, Mode 2 with $K_{eff} \geq 1.0$." and that a note be added to SR 3.4.2.1 stating "Not required to be performed when T_{ave} in all loops is > [535]°F."

E. Unexplained differences between parallel LCOs in different sections:

- a. LCO 3.4.10 vs 3.7.1:

LCO 3.4.10 specifies a band of pressures for the pressurizer safety valve setpoints; LCO 3.7.1 specifies the setpoint of each SG safety valve individually. Both LCOs should be alike.

F. Method of listing SRs from a related LCO which are applicable:

- a. SR 3.5.3.1: "The following SRs are applicable:" (list provided.
- b. SRs 3.8.2.1 and 3.8.5.1 list both some SRs which are not required to be performed and some which are applicable; there is overlap between the lists. I find the method used in section 3.8 difficult and unclear. I suggest that in each case the required SRs be listed.

G. Test Exceptions:

LCO 3.1.8 and 3.1.9 refer to "Special Test Exceptions" and use the abbreviation "STE"; LCO 3.4.17 refers to "Test Exceptions" without using any abbreviation.

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LCO 3.0.7 discusses "Special Test Exception (STE) LCOs". LCO 3.4.17 should be corrected.

H. LCO 3.0.4 vs. SR 3.0.4:

These two LCOs have similar, but not identical wording, for portions which have identical intent. The affected paragraph of each item is listed below with the subject sections highlighted:

LCO 3.0.4 When an LCO is not met, entry into a MODE or other specified condition in the Applicability shall not be made except when the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time. This Specification shall not prevent changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS.

SR 3.0.4 Entry into a MODE or other specified condition in the Applicability of an LCO shall not be made unless the LCO's Surveillances have been met within their specified Frequency. This provision shall not prevent passage through or to MODES or other specified conditions in compliance with Required Actions.

The highlighted portions should be identical.

I. LCO 3.0.1 vs. SR 3.0.1:

Similarly to the 3.0.4s, the 3.0.1s have similar, but not identical wording:

LCO 3.0.1 LCOs shall be met during the MODES or other specified conditions in the Applicability, except as provided in LCO 3.0.2 and LCO 3.0.7.

SR 3.0.1 SRs shall be met during the MODES or other specified conditions in the Applicability for individual LCOs, unless otherwise stated in the SR. Failure to meet a Surveillance, whether such failure is experienced during the performance of the Surveillance or between performances of the Surveillance, shall be failure to meet the LCO. Failure to perform a Surveillance within the specified Frequency shall be failure to meet the LCO except as provided in SR 3.0.3. Surveillances do not have to be performed on inoperable equipment or variables outside specified limits.

IV. Structure (LCO, Applicability, Conditions SRs etc):

- A. SR 3.1.5.2 requires verification of CEA position indicator channel accuracy, but LCO 3.1.5 does not require any specific number of position indication channels to be operable & no Action is provided if position indication is inoperable or inaccurate.

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- B. SRs 3.2.2.2 and 3.2.2.3 verify parameters which have no limit imposed by the LCO; there are no Actions provided by this LCO for F_{xy} or T_q . It appears that the determination of these parameters is simply part of the determination of F_{xy}^T . These SRs should be combined as "Verify the values of T_q , F_{xy} , and F_{xy}^T .", or simply state in the basis that the determination of these other parameters is part of the determination of F_{xy}^T .
- C. SRs 3.2.3.2 and 3.2.3.3 verify parameters which have no limit imposed by the LCO; there are no Actions provided by this LCO for F_r or T_q . It appears that the determination of these parameters is simply part of the determination of F_r^T . These SRs should be combined as "Verify the values of T_q , F_{xy} , and F_r^T .", or simply state in the basis that the determination of these other parameters is part of the determination of F_r^T .
- D. LCO 3.4.4 has no SR to verify the operability required by the LCO. The basis does not discuss those items necessary to make the RCS loops operable. The SR which is provided is unnecessary, since the RPS will assure that mode 3 is entered quickly if an RCS loop is in operation. The entire LCO seems to provide no benefit.
- E. LCO 3.4.11: This LCO states "Each PORV . . ."; most LCOs use the required number, rather than saying "each" or "all".
- F. LCO 3.7.5: This LCO presents different requirements for different applicabilities by means of a note. That is different from the method used in other sections which use different LCOs when requirements change with plant conditions (see LCOs 3.1.1 & 3.1.2, 3.3.1 & 3.3.2, 3.4.4 through 3.4.8, and all of section 3.8). In order to be consistent, LCO 3.7.5 should be broken into a MODE 1, 2, & 3 LCO and a MODE 4 LCO.

V. Limits not specified in units available to the operators:

- A. SR 3.5.1.3 has a special frequency which is based on a level change of 1% of tank volume, as was required in the former STS. Percent tank volume is not the parameter measured on the installed instrument. Neither the basis nor the LCO provide the total tank volume to allow determining how much of an indicated level change triggers the requirement to perform the SR. Assuming that the middle of the allowable level band is equivalent to half of the tank volume (which would be appropriate at Palisades) and using the numbers provided in the LCO and basis, we find that a "solution volume increase of $\geq 1\%$ of tank volume" is equivalent to a change of about 37 ft³ (280 gallons) or 14.5% indicated level. This is certainly misleading, having both percent indicated level and percent tank volume used in the same LCO.
- B. LCO 3.7.16: This LCO refers to the fuel pool level in terms of feet above the fuel. That may not be the units available to, or used by, the operators. At Palisades we typically measure levels like this by elevation. I suggest that the reference to 23 feet above the fuel be placed in brackets to allow utilities to insert their own units. The conversion should be discussed in the bases.
- C. LCO 3.9.4: see note about use of 23 feet for LCO 3.7.16.
- D. LCO 3.9.5: see note about use of 23 feet for LCO 3.7.16.

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- E. LCO 3.9.6: see note about use of 23 feet for LCO 3.7.16.

VI. Editorial and typographical

- A. Lack of parenthetical notes explaining a SR or LCO quote such as "Perform SR 1.2.3.4", which were to be followed by a parenthetical (Quick description). A parenthetical repeat of the Condition statement was also to be included when a Condition was carried over onto another page.
- B. SR 3.6.2.2 wording should be altered to assure that the requirement only applies to the airlock used for the subject entry. I suggest adding "affected" between "the" and "airlock".

VII. Inconsistent Brackets [] :

- A. LCO 3.1.5 brackets the requirement for a CEA motion inhibit and CEA deviation circuits, but the associated Actions (C & D) and SRs (3.1.5.3 & 3.1.5.4) are not bracketed.
- B. LCO 3.3.3: The requirement for reactor trip breakers "[four] channels of reactor trip circuit breakers (RTCBs)," is not bracketed, nor are the associated RTCB references in the applicability, Conditions, or Actions. The SR associated with RTCBs (SR 3.3.3.3) is bracketed. The bracketing should be consistent. All CE units are not equipped with RTCBs, but Palisades may be the only exception. Probably, there should be no brackets on the SR.
- C. LCO 3.3.4: Condition A, dealing with CSAS, is bracketed, but the CSAS exception in Condition B "(except CSAS inoperable)" is not bracketed. Both should be bracketed.

VIII. Observations

- A. The addition of "Neutron detectors may be excluded from CHANNEL CALIBRATIONS." to the channel calibration definition would eliminate the need for repeating that note in each NI channel calibration SR. It would be consistent with the addressing of thermocouples within the channel calibration definition. This would affect at least SRs 3.3.1.5, 3.3.2.4, 3.3.11.2, 3.3.13.3, and 3.9.2.2
- B. Notes which simply avoid Condition entry, when appropriate Action would and should be completed within the stated completion time anyway.
1. LCO 3.1.5: "This LCO is not applicable while performing SR 3.1.5.5".
 2. LCO 3.1.6: "This LCO is not applicable while performing SR 3.1.5.5 [or during reactor cutback operation]."
 3. LCO 3.4.1 "Pressurizer pressure limit does not apply during: . . ." (power ramps and steps.)
- C. Unnecessary complexity:
1. LCO 3.2.1, Condition A should simply read "LHR not within limits." The balance of the information provided should reside in the basis, or possibly in the COLR. Information on how to determine whether a parameter is within the limits does not need to be stated in the Condition.

COMMENTS ON CE RESTRUCTURED TECHNICAL SPECIFICATIONS

2. LCO 3.7.5: The Required Actions and completion times for Conditions D and E are identical. It would be a bit cleaner and shorter to combine these two Conditions using an OR connector, as is done in many other cases.

D. Un-necessary note

Note (c) on table 3.3.1-1, page 1,(Analog) is unnecessary in that it allows a trip to be bypassed at conditions which would place the plant out of the applicability for that trip.

E. Redundancy

SR 3.0.4 is redundant to the combined requirements of LCO 3.0.4 and SR 3.0.1. SR 3.0.4 could be deleted without effect.

Simply stated, SR 3.0.4 prohibits changing Modes unless required SRs are current (i.e. failed or not performed within the required period). Similarly, LCO 3.0.4 prohibits changing Modes unless required equipment is Operable. SR 3.0.1 states that if the required surveillance is current, the equipment is inoperable. Therefore, if a surveillance is not current, the associated equipment is inoperable and LCO 3.0.4 provides the same limitation as SR 3.0.4.

Indeed, a very literal reading could conclude that if a surveillance is not current, the equipment is inoperable (per SR 3.0.1) and therefore no surveillance is required (again, per SR 3.0.1) whereby SR 3.0.4 is without effect. LCO 3.0.4, with this reading, would provide the desired restriction on Mode changes.

I believe that SR 3.0.4 should be deleted, thereby increasing both clarity (Why are there two limits?) and brevity. I list the subject sections below, for reference. The second paragraph of LCO 3.0.4 is not pertinent to this discussion.

LCO 3.0.4 When an LCO is not met, entry into a MODE or other specified condition in the Applicability shall not be made except when the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time. This Specification shall not prevent changes in MODES or other specified conditions in the Applicability that are required to comply with ACTIONS.

SR 3.0.1 SRs shall be met during the MODES or other specified conditions in the Applicability for individual LCOs, unless otherwise stated in the SR. Failure to meet a Surveillance, whether such failure is experienced during the performance of the Surveillance or between performances of the Surveillance, shall be failure to meet the LCO. Failure to perform a Surveillance within the specified Frequency shall be failure to meet the LCO except as provided in SR 3.0.3. Surveillances do not have to be performed on inoperable equipment or variables outside specified limits.

COMMENTS ON CE RESTRUCTURED TECHNICAL SPECIFICATIONS

SR 3.0.4 Entry into a MODE or other specified condition in the Applicability of an LCO shall not be made unless the LCO's Surveillances have been met within their specified Frequency. This provision shall not prevent passage through or to MODES or other specified conditions in compliance with Required Actions.

F. Severe Required Action:

The Required Action of STE LCO 3.4.17 seems unusually severe. If power were to drift up to 6%, an immediate scram is required, yet the over power scram setpoints are specified at 20%. It would seem that either a less severe Action should be provided for allowable excursions (if any excursion is acceptable) above the LCO limit, and the RPS setpoints be specified at the point where a scram is required.