

Region 1 Comments
Preliminary Results of Phase 1 RBPI Development

- (Page 3-1) - "... initiating event performance indicators must be capable of detecting performance changes in a timely manner (i.e., <5 years)." The current PI are monitored over the past 4 quarters. Requiring a 5 year performance monitoring period may not be considered by some individuals as timely.
- (Page 3-2) - "... plant-specific SPAR (Revision 3i)(Ref. 11) models, baselined to 1996 performance." The Rev. 3 SPAR models use basic event data from various references many of which are not referenced to 1996 data. It should also be made clear that the SPAR models use generic and not plant specific basic event data.
- (Page 3-2, Table 3.1.1-1) It may not be beneficial to attempt to split the loss of feedwater and the loss of heat sink into two PIs. Currently there is a single PI which covers both conditions. Since a loss of condenser (heat sink) will generally result in a loss of feedwater (steam driven FW pumps trip on high condenser vacuum) it does not appear necessary to split the two events.
- (Page 3-2, Table 3.1.1-1) "Loss of Vital AC (BWR & PWR)" results in a yellow performance band finding. This PI requires a footnote with providing specific details. It's not unusual for a plant to experience a short duration loss of an vital bus (~2 hours). I don't believe it was intended for this type of event to result in a Yellow PI. The same comment holds true for a number of event severity indicators in that specific conditions would need definition [internal flooding (any flood regardless of equipment affected), loss of vital dc, stuck relief valve (fuses could be pulled and valve closed), etc.]
- (Page 3-2, Table 3.1.1-1) The event severity indicator for steam generator tube ruptures (PWR) is yellow. Based on an NRR risk evaluation, a recent SGTR risk evaluation indicated that the risk would be red.
- (Page 3-2, Table 3.1.1-1) an event severity indicator for an ATWS could be added for the red performance band.
- (Page 3-6) "PWR plants will monitor seventeen mitigating system/component class RBPIs (four in current ROP)." It's not clear what the additional 13 systems or component classes are. The additional systems appear to be CCW, SW, PORVs and the component classes are AOV, MOVs, and MDPs. It appears that there are only 6 additions for a total of 10? Same comment is valid for BWRs.
- (Page 3-8, tables 3.1.2-1 and 3.1.2-2) would like to propose including electrical breakers as a component class.
- (Page 3-11, Table 3.1.2-4) this table states that vital ac and dc power are not amenable to PI treatment, yet the event severity indicators for vital ac and dc power are in a sense a PI. It would be helpful to include a discussion that explains these apparent contrary statements.

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- (Page 3-12) it doesn't appear that much progress was made in proposing RBPI for the containment barrier. Since the SDP for this barrier is difficult to apply, it would be nice to have some PI coverage in this area. A discussion of using "as found" type A, B and C, appendix J leak testing results or reliability and unavailability of containment support systems warrants further consideration.
- (Page 3-14, Table 3.2.1-1) asking the reduced inventory question is superfluous. The RHR recovery question alone determines the color of the event severity indicator.
- (Page 3-15, Table 3.2.1-1) "Loss of operating train of RHR and its support systems" It appears that "and" should be "or". If RHR is lost you shouldn't also have to lose the support systems!
- (Page 3-15, Table 3.2.1-1) it would be helpful to add event severity indicators for more typical events such as an inadvertent diversion of inventory where RHR is not lost or the RHR heat exchanger is bypassed (BWR recirculation pump discharge valve left open bypassing RHR heat exchangers resulting in an inadvertent mode change at Hope Creek).
- (Page 3-16, Section 3.2.2) the RBPI approach for shutdown could be very time consuming and difficult to apply. A broad feasibility bench-marking study would need to be performed before seriously considering this option.
- (Page 3-21, Table 3.2.2-5) "human performance" should be added to the risk-significant areas modeled but not amenable to PI treatment.
- (Page 3-25, Table 3.3.1-1) for many plants, area CCDPs can not be ascertained from the docketed IPEEE information. (See Peach Bottom IPEEE as an example). A practicality review for this RBPI approach is needed.
- (Page 3.3.2, Section 3.3.2) a RBPI that would count the total number of plant risk significant areas where fire detection/mitigation systems are being compensated for (fire watches) could be considered for a PI.
- (Page 4-1) it's not clear how RBPI coverages were determined. Acronyms used on Table 4.2b for the systems are not defined.
- (Page 5-2, Section 5.2) it's not clear how the 5% false negative and 20% false positive probabilities were derived for the RBPIs.
- (Page 5-3) Caution should be taken when applying RAWs from the SPAR Rev. 3 models. These models have not been validated or benchmarked against the licensee's PSA models. For a sample of the 15 discrepancies, it may be useful to also compare thresholds established using the licensee's PSA RAWs.