



Prairie Island Nuclear Generating Plant

**NRC Region III
Regulatory Conference**

**Emergency Action Level Scheme
Issue**

May 11, 2010

Agenda

- Opening Remarks – Mark Schimmel
- Sequence of Events – Tim Blake
- Causes and Corrective Actions – Tim Blake
- Regulatory Significance – Jon Anderson
- Barriers and Operator Actions – Terry Bacon
- Summary – Mark Schimmel
- Closing Remarks – Dennis Koehl

Opening Remarks

- Prairie Island (PINGP) takes its obligation to protect the health and safety of the public very seriously
- Performance Deficiency
 - Failure to follow and maintain in effect emergency plans which use a standard emergency classification and action level scheme
 - We agree with the performance deficiency
- Causes and Corrective Actions
- Regulatory Significance

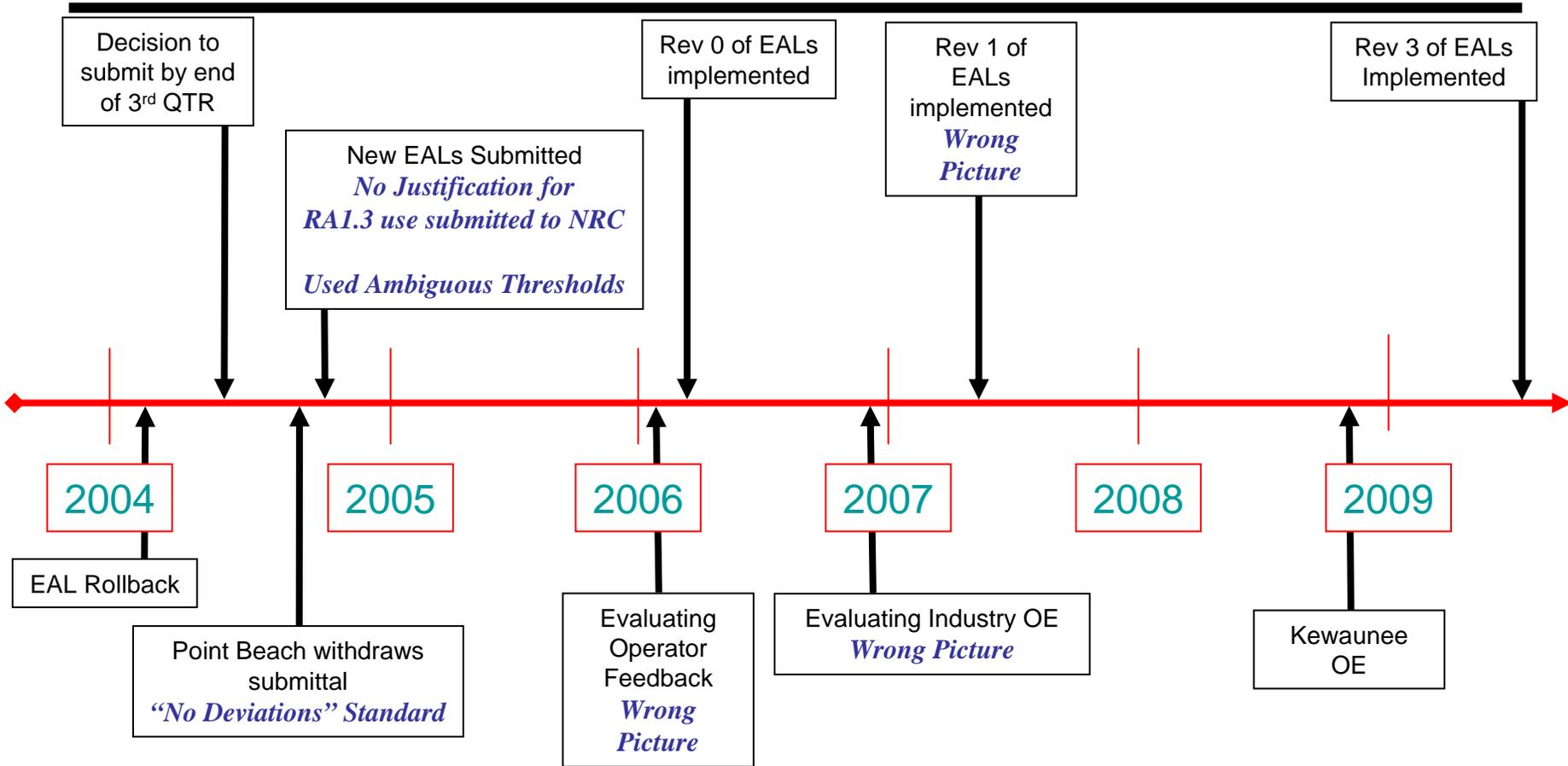
Sequence of Events, Causes, and Corrective Actions

Tim Blake, Fleet Emergency
Preparedness Manager

EAL Description

- Initiating Condition RA1 – Any UNPLANNED Release of Gaseous or Liquid Radioactivity to the Environment that Exceeds 200 Times the Offsite Dose Calculation Manual (ODCM) Specification for 15 Minutes or Longer
 - RA1.1 – Applicable to routine release pathways, for which a discharge permit is normally prepared
 - RA1.2 – Applicable to non-routine release pathways, for which a discharge permit would not normally be prepared
 - RA1.3 – Confirmed sample analysis

Sequence of Events Timeline



Blue comments are missed opportunities

Revision 3 to EALs

- Completed in June 2009
- Note related to use of RA1.3 for offscale radiation monitors removed from Table R-1
- ALERT threshold changed to an unambiguous value for R-18
- Offsite Dose Calculation Manual alarm setpoints for R-25 and R-31 were reduced so these radiation monitors would read on scale at 200 X the alarm setpoint

Missed Opportunities

- Writers failed to use specific numbers for thresholds, instead used “200 X ODCM limits”
- Literal application of fleet expectation for deviations
- Did not document and justify the use of EAL RA1.3 as an alternative entry into an ALERT for off scale radiation monitor readings
- Inadequate assessment of feedback and industry operating experience

Root Cause Evaluation

- Root Cause
 - Existing procedure did not provide adequate guidance for changing EALs or EAL schemes
- Contributing Cause
 - Change in standard and subsequent scope without sufficient resources
- Extent of Condition
 - All extent of condition actions completed
 - No other examples of the condition found
- Extent of Cause

Interim Actions Taken

- EAL scheme change to NEI 99-01, Rev 5 will not be made until procedure revisions are implemented
- Reviewed past 10 CFR 50.54(q) evaluations
- New 10 CFR 50.54(q) evaluations associated with risk significant planning standard changes require independent external reviews until the fleet procedure is revised

Corrective Actions

- Create a fleet procedure for changing EALs and EAL schemes with detailed guidance for:
 - Proposed staffing levels and time allowances to develop and validate major changes
 - Acceptable methods for meeting or changing EAL entry condition thresholds when the setpoint is beyond indication range
 - Engineering reviews for changes requiring process indication or environmental monitoring
 - Additional validation reviews
 - Justification of changes in preparation for NRC submittals
- Revise EALs to include unambiguous threshold values

Regulatory Significance

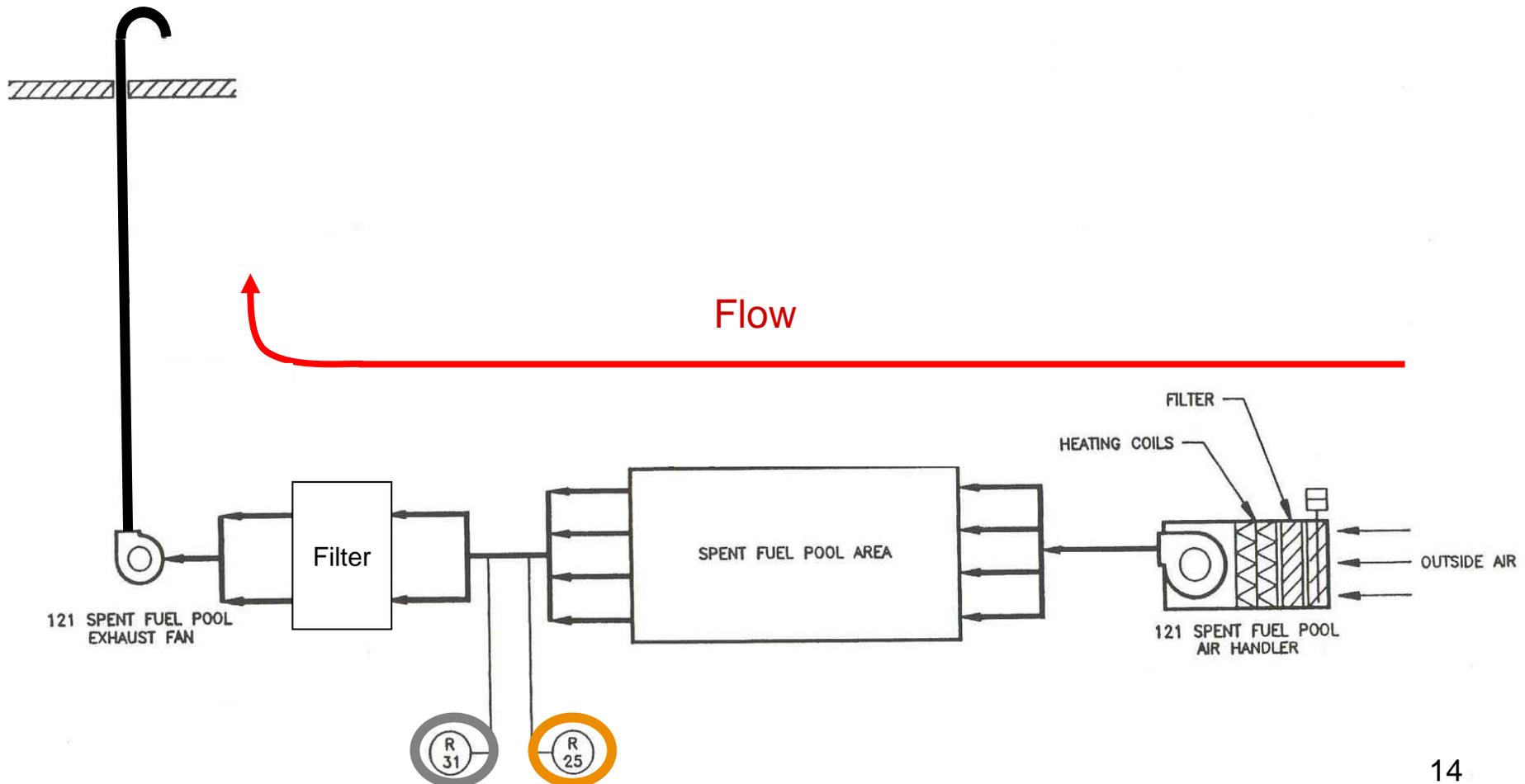
Jon Anderson – Regulatory Affairs Manager

Regulatory Significance

| EALs | Thresholds | Bases | Radiation Monitors |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|--------------------|
| RA1.1 | VALID reading on any effluent monitor that exceeds 200 times the alarm setpoint established by a current radioactivity discharge permit for 15 minutes or longer | Monitoring on routine release pathways for which a discharge permit is normally prepared | R-18 |
| RA1.2 | VALID reading on one or more radiation monitors that exceeds 200 times the alarm setpoint for 15 minutes or longer | Addresses monitoring on non-routine release pathways for which a discharge permit is not normally prepared | R-25 R-31 |

Regulatory Significance

- R-25/31 Spent Fuel Pool Ventilation Radiation Monitors



Regulatory Significance

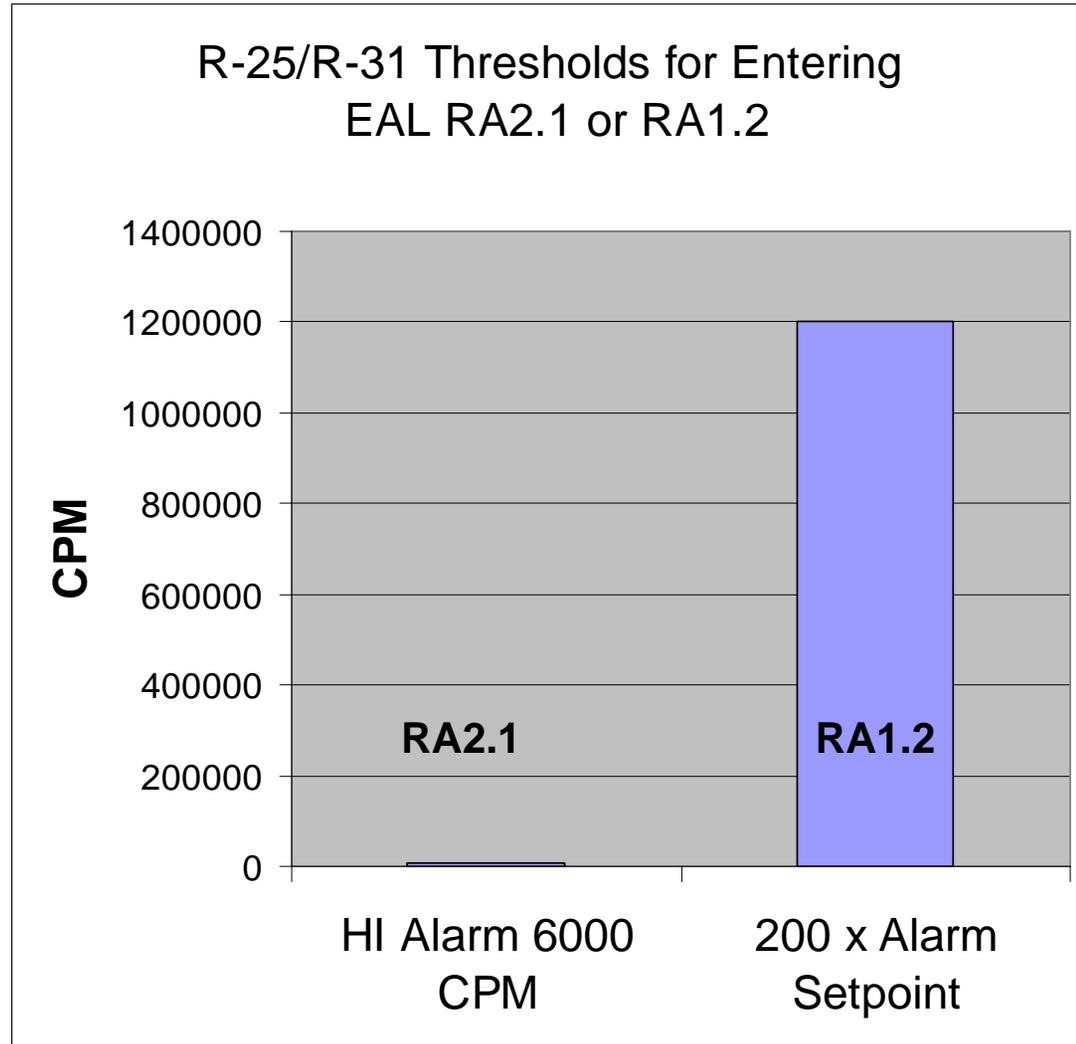
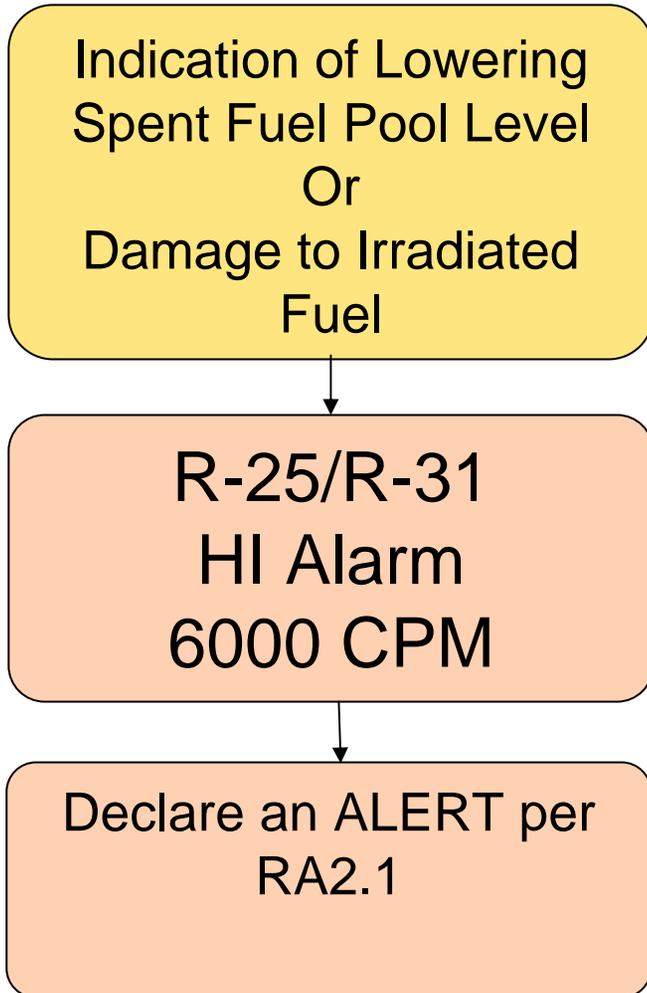
- Initiating Condition RA2 – Damage to Irradiated Fuel or Loss of Water Level that Has or Will Result in the Uncovering of Irradiated Fuel Outside the Reactor Vessel

| EAL | Threshold | Basis | Radiation Monitors |
|-------|------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|--------------------|
| RA2.1 | A VALID alarm on one or more of the following radiation monitors: R-25 or R-31 Spent Fuel Pool Air Monitor (HI Alarm) | Addresses indication of fuel uncovering or damage | R-25 R-31 |

Regulatory Significance

| EALs | RA 2.1 | RA 1.2 |
|---------------------|------------------------------------------|-----------------------------------------|
| Radiation Monitors | R-25 R-31 | R-25 R-31 |
| ALERT Thresholds: | HI-Alarm Setpoint (6,000 CPM) | 200 x Alarm Setpoint (1,200,000 CPM) |
| Instrument Scaling: | 10 – 1,000,000 CPM | 10 – 1,000,000 CPM |

Regulatory Significance

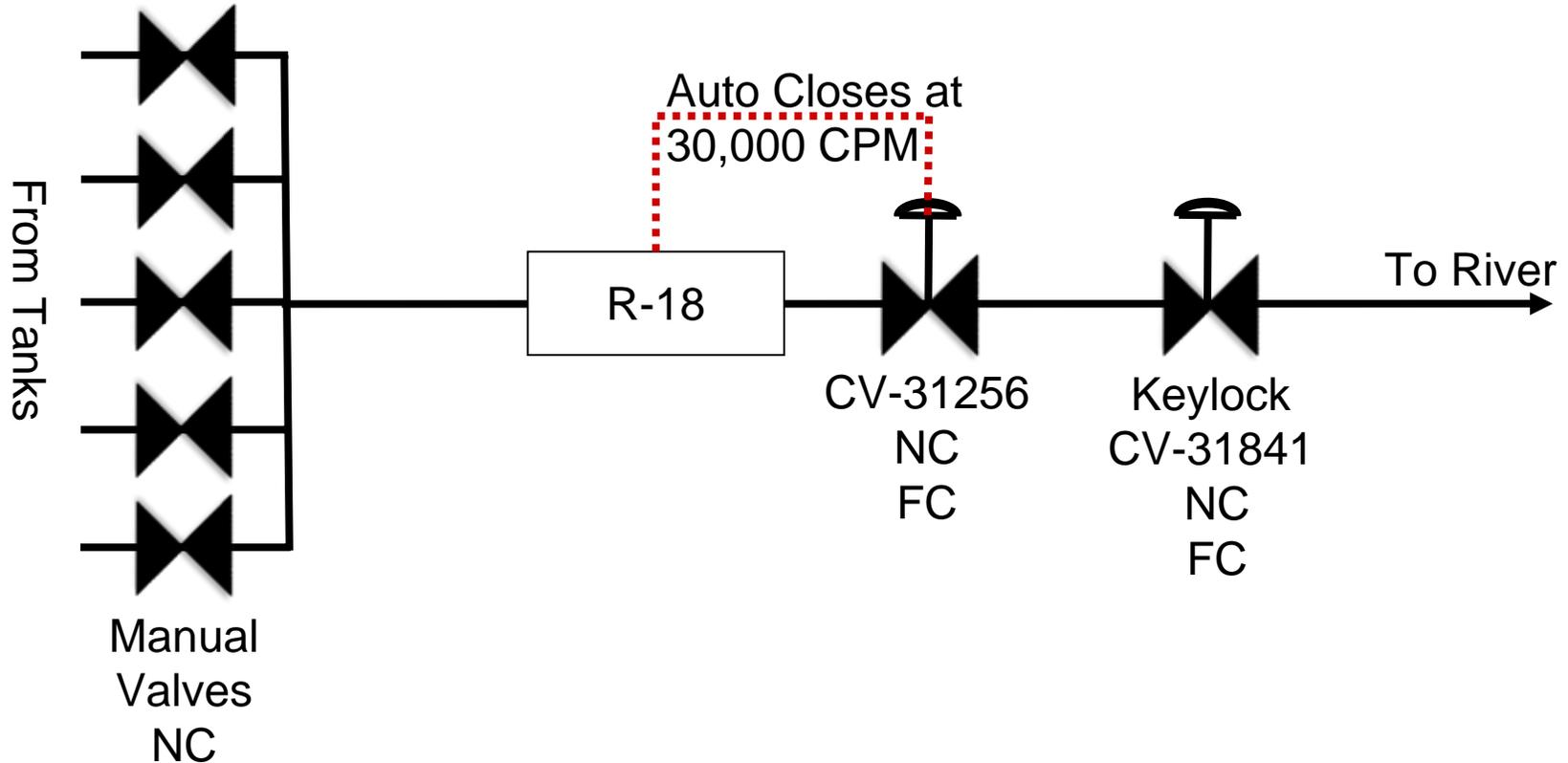


Barriers and Operator Actions

Terry Bacon – Operations Support Manager

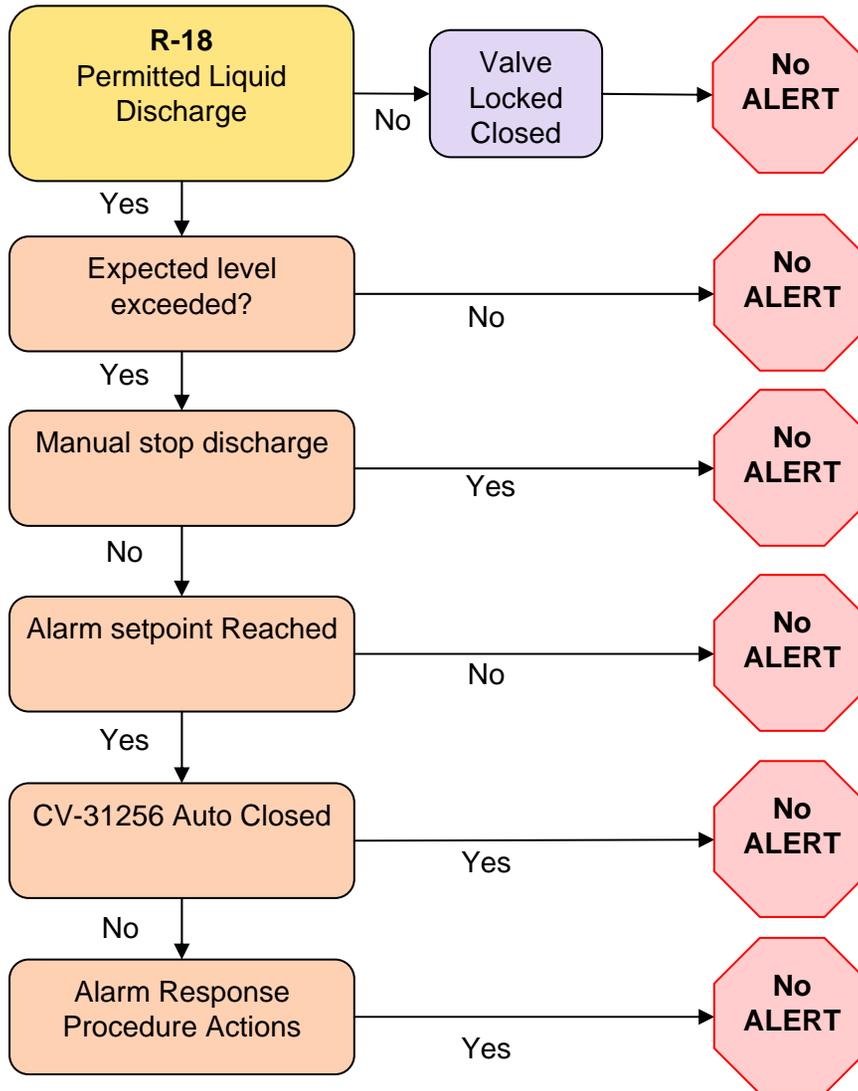
Barriers and Operator Actions

- R-18 Waste Effluent Liquid Monitor



Barriers and Operator Actions

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- Multiple process and design barriers are in place such that the potential to enter RA 1.1 is extremely low

Barriers and Operator Actions

- Tabletop Scenario
 - 5 of 5 operators declared an ALERT

Summary

Mark Schimmel, Site Vice President

Closing Remarks

Dennis Koehl, Chief Nuclear Officer

