Breakout Sessions

1. ICE & Westinghouse 3-LOOP
2. Westinghouse 4-LOOP and CANDU
3. B&W and BWRs
4. CE Units

Breakout Sessions
ICE & Westinghouse 3-Loop

Group - ICE, 3 Loop **Facilitator: John Hertz**

Successes – What has gone right

(Plant) **(Representative)** **Beaver Valley** **Scott York** **Gabe Van Horn** **Jeff Fontaine**	➢ First success – Met online dose goals. Improved the estimation process ang got better at digging into detail and driving dose ownership. At mid-year adversely trending groups were spotlighted. SLT turnover helped this change culture. ➢ Second success – source term reduction committee has good initial momentum
(Plant) **(Representative)** **North Anna** **David Hendricks**	➢ First success – 20% source term reduction on U2 attributed to zinc injection over last 2 cycles. U1 saw 22% over 2 cycles. ➢ Second success – Drone usage, especially for overhead inspections and ctmt entries at power. Flew into 30 R field to do walkdown to plan a job for outage work. Estimated to have saved 17 REM over several years. ➢ Also: getting work groups to answer to their dose, communicate week estimates to work groups 3-4 weeks ahead

Group - ICE, 3 Loop **Facilitator: John Hertz**

Successes – What has gone right

(Plant) **(Representative)** **Surry** **Doug** **VanHoorebeck**	➢ First success – During upflow mod on core used 2 trinukes specific for project (10-micron filter) and relied on UD48 demin to pick up rest. Created 50 filters, got a carousel for holding filters, loaded carousel directly into shipping container… treated loading like a core barrel lift and evacuated ctmt… took a shift, saved 600-800 mrem vs handling individual filters ➢ Second success – Replacing RHR HXs in Ctmt near thimble tubes. Used magnetic locking shielding on dog house wall, tons of temp shielding, put permanent shield frames in keyway to reduce upward shine, leveraged lessons learned on 1st HX to reduce work in Ctmt on 2nd HX replacement ➢ Also, relocated valve with hose on DCS project to get operators out of dose

Group - ICE, 3 Loop **Facilitator: John Hertz**

Successes – What has gone right

(Plant) **(Representative)** **Watts Bar** **Kevin Weirich**	➢ First success – fuel handling gripper repair online worked from spider basket suspended from fuel bridge (rather than massive scaffold assembly in Rx Cavity) … saved 800-1000 mrem. ➢ Second success – simplified head assembly picked up -9 REM from one outage to the next by applying lessons learned
(Plant) **(Representative)** **Sequoyah** **John Hertz**	➢ First success – SLT promoting dose ownership, work groups discuss weekly est vs actual at T+1 for online work ➢ Second success – rivertech vortex vacuum filtration for SG inspection probe pushers
(Plant) **(Representative)**	➢ First success - ➢ Second success –

Group – ICE, 3 Loop **Facilitator: John Hertz**
Challenges – What has gone wrong

(Plant) **(Representative)** **Beaver Valley** **Scott York** **Gabe Van Horn** **Jeff Fontaine**	➢ First challenge – bottomed out on dose reduction efforts, new SLT helped change this mentality ➢ Second challenge – getting low source term plant to invest in dose reduction
(Plant) **(Representative)** **North Anna** **David Hendricks**	➢ First challenge – staffing shortages, lower quality technicians during outage ➢ Second challenge – insufficient number of house techs to provide oversight/support
(Plant) **(Representative)** **Surry** **Doug VanHoorebeck**	➢ First challenge – Pzr heater replacement with 30 REM initial estimate… 60 REM when Calvert Cliffs did it ➢ Second challenge – replacing moveable incore detectors with fixed detectors… how to plan the removal of the old thimbles ➢ Also, evaluating full macro-porous mixed bed… this is sensitive to physical shocks when put in and out of

Group – ICE, 3 Loop **Facilitator: John Hertz**
Challenges – What has gone wrong

	service (especially late in cycle when it could release material)
(Plant) **(Representative)** **Watts Bar** **Kevin Weirich**	➢ First challenge – high turnover in SLT so dose champion program is floundering ➢ Second challenge – anticipating high crud burst activity in 2 outages due to recent SGR… looking at extended RCP run time after crud burst
(Plant) **(Representative)** **Sequoyah** **John Hertz**	➢ First challenge- Rx cavity leakage from multiple sources (cavity seal and nozzle covers) ➢ Second challenge- inconsistent performance of EPRI/SRMP data collection and aggregation
(Plant)	➢ First challenge-

Group – ICE, 3 Loop Facilitator: John Hertz
Challenges – What has gone wrong

(Representative)

- Second challenge-

Golden Nuggets:

- **Beaver Valley – created RWP review checklist to guide RP Supv and ALARA when approving RWPs… done by polling RP Supv on common issues they were finding**
- **North Anna – accumulation of class B & C filters and stuff… contracted with different vendor that allowed them to put filters into resin liners… topped off the voids with other stuff like concrete dust, low-level sludge, and legacy sources which knocked down dose rates (WCS was vendor)**
- **Surry – easy data retrieval… scaffold tracker that shows number of scaffold builds in the plant… schedule integration of RP activities**

Group – ICE, 3 Loop Facilitator: John Hertz
Challenges – What has gone wrong

- **Watts Bar – carpenters take work group rep for scaffold walkdown**

- **Sequoyah – pre-outage staging of comms and remote monitoring equipment**

Breakout Sessions
Westinghouse 4-Loop & CANDU

Group - PWR, 4 Loop **Facilitator: Joe Coughlin**

Successes – What has gone right

(Plant) (Representative) Callaway Adam Gilliam	➢ First success – Lowest dose outage fall 2023 for 22 Rem primary. Team working together to reduce outage duration. ➢ Second success – Alara Analyst creates RP info brief sheets that gets incorporated into outage packages for FLSs to brief off of and plan during work preps.
(Plant) (Representative) Constellation Peter Imm	➢ First success – Use of innovation during Lasalle bottom head drain project. Extensive remote monitoring use. ➢ Second success – Dresden identified how to reverse flush core spray system reducing dose rates. Use to forward flush can no longer with FME concerns. Challenged at Quad T-2 and can now implement as well.

Group - PWR, 4 Loop **Facilitator: Joe Coughlin**

Successes – What has gone right

(Plant) **(Representative)** **Diablo Canyon** **Felix Martinez**	➢ First success – During outage had one Analyst on each shift only. Utilized P6 and increased schedule refreshes to more efficiently generate a earn to burn curve and make estimate updates. Utilizing going forward. ➢ Second success – 360 and laser scanning implemented to allow for worker review of areas from all work stations.
(Plant) **(Representative)** **Wolf Creek** **Bob French** **Rhonda Bewley**	➢ First success – Utilized WO's when logging in and estimates compared to P6 work orders allowing for better dose estimate comparisons. ➢ Second success – Use of 360 3D Vista to create virtual tours being utilized by radworkers prior to entry to RCA
(Plant) **(Representative)** **Joe Coughlin** **Braidwood**	➢ First success – SG secondary side guide vane repairs in all 4 SGs during last outage. Released areas from a CA and utilization of clean flame-retardant scrubs/PC's ➢ Second success – Installation of permanent network switches and associated wiring in containment

Group - PWR, 4 Loop **Facilitator: Joe Coughlin**

Successes – What has gone right

(Plant) (Representative) Bruce	➢ First success – 3D print tungsten shielding onsite. Make foam protype to ensure fit then print the tungsten package.
Bryce Beattie Lisa VonHatton Alistar Dykstra	➢ Second success – Implemented crawler for inspection of feeder tubes. Now one Operator overseeing 2 inspection crawlers versus 2 Operators per inspection. Supported for implementation of new innovations.

Group – PWR, 4 Loop **Facilitator: Joe Coughlin**
Challenges – What has gone wrong

(Plant) **(Representative)** **Callaway** **Adam Gilliam**	➢ First challenge – Radworker proficiency challenges; dose alarms, dose rate alarms, 2 level 2 PCEs. A lot of new to nuclear inexperienced workers. ➢ Second challenge – Drained xfer canal creating airborne conditions. Challenges with use of respiratory protection and hot work conditions resulted in a heat stroke condition. ➢
(Plant) **(Representative)** **Constellation** **Peter Imm**	➢ First challenge – Few plants with uptakes >10mRem requiring challenges and complicated internal calculations. ➢ Second challenge – Experience level of RPTs and understanding knowledge gaps when supporting work activities.
(Plant) **(Representative)** **Diablo Canyon** **Felix Martinez**	➢ First challenge- Sentinel having old RWP #'s assigned thru work control process not noticed resulting in about 2Rem of unplanned exposure.

Group – PWR, 4 Loop **Facilitator: Joe Coughlin**
Challenges – What has gone wrong

	➢ Second challenge- Only 2 Alara Analysts on org chart with additional workload due to relicensing.
(Plant) **(Representative)** **Wolf Creek** **Bob French** **Rhonda Bewley**	➢ First challenge – Switched to Maximo scheduling tool and having issues with getting estimates assigned to WO's. Many challenges with proficiency and new program challenges. ➢ Second challenge – Inspection of under vessel liner plate creating challenges to additional work created and emergent dose. What all done at one time vs have to do.
(Plant) **(Representative)** **Joe Coughlin** **Braidwood**	➢ First challenge- Spent resin pump sluice issues resulting in emergent repairs and increased dose rates ➢ Second challenge- No flush of PZR surge line at beginning of outage challenging cnmt area dose rates

Group – PWR, 4 Loop **Facilitator: Joe Coughlin**
Challenges – What has gone wrong

(Plant) **(Representative)** **Bruce** **Bryce Beattie** **Lisa VonHatton** **Alistar Dykstra**	➢ First challenge- Scaffold workers (advance radworkers) at times build into areas making accessible to areas needing posting changes. ➢ Second challenge- Obtaining Engineering approvals for implementation of using ultra sonics for elimination of piping hot spots.

Golden Nuggets:

- **Braidwood – Radworker quiz (WANO Strength)**
- **Callaway- Outage incentives with hook on meeting daily dose goals**
- **Constellation- Utilizing questions on Sentinel during radworker logins**
- **Diablo Canyon- Automated daily dose report**
- **Wolf Creek- Newer motivated shielding Engineer utilizing previous evaluations**

Group – PWR, 4 Loop Facilitator: Joe Coughlin
Challenges – What has gone wrong

- **Bruce- 3D printed tungsten shielding in house**

Breakout Sessions
B&W and BWRs

Group – B&W, BWR's **Facilitator: Jonah Morgan**

Successes – What has gone right

(Plant) **(Representative)** **Peach Bottom** **Caitlin Jacobus**	➢ First success – #Reacitve vs #Proacitve. ➢ Second success – Neutron Monitoring in Sentinel. Ratio on Paper now in Sentinel RWP Task. Based on White Paper and historic Data.
(Plant) **(Representative)** **Davis Besse** **Ryan Brown**	➢ First success – Permanent Shielding Boxes in Containment (All Shielding) Just Lead, Saved about a shift of time. ➢ Second success – Reactor Cavity Seal Plate Shielding, INPO Strength. Steel Plates and Magnetic Shielding, 6 REM of savings.
(Plant) **(Representative)** **Nine Mile Point** **Robert Witzak**	➢ First success – Fully Staffed ALARA Team, 2023 no ALARA techs. People participating ➢ Second success – ALARA incentive programs by Project, Holiday Themed ALARA gifts.

Group – B&W, BWR's **Facilitator: Jonah Morgan**

Successes – What has gone right

(Plant) **(Representative)** **Fitzpatrick** **Caitlin Mayer**	➢ First success – Station implemented in Production Meeting to discuss Radiological Risk instead or CRE, gets more buy in from the Craft. CRE falls in line. ➢ Second success – Ever Month, report out on CA and High Rad Area, which has cause, 3 HRA and 25,000 Square Feet of Contaminated areas.
(Plant) **(Representative)** **South Texas Project** **Jonah Morgan** **Eric Hood**	➢ First success – Due Failed Fuel issues, more buy in from Outage Management in scheduling Normal Purge, clean up, etc. ➢ Second success – Use of OneNote to information sharing, problem resolution, INPO Documents, 23-001 Teaching and Learning Videos.
(Plant) **(Representative)** **Grand Gulf** **Erica Hunt**	➢ First success – N/A ➢ Second success – N/A

Group – B&W, BWR's **Facilitator: Jonah Morgan**
Challenges – What has gone wrong

(Plant) **(Representative)** **Peach Bottom** **Caitlin Jacobus**	➢ First challenge – Moister Carry Over from New Fuel design and Replaced Dryer Separator, 2-3 times higher dose rates in Turbine and Drywell. High Contamination levels. ➢ Second challenge – Teaching and Learning, using KTR with seasoned techs. A lot of crossing training with newer techs due to retirement.
(Plant) **(Representative)** **Davis Besse** **Ryan Brown**	➢ First challenge – Succession Planning, replacing 25 plus years' experience, breaking down kingdom building. ➢ Second challenge – RCB Wall cracking and repair. Shielding Building Project pick up 3-4 Rem of dose per year.
(Plant) **(Representative)** **Nine Mile Point** **Robert Witzak**	➢ First challenge- 47 percent emergent dose, 26 REM in 2022, 18 REM in 2023. Equipment Reliability issue leading to emergent dose.

Group – B&W, BWR's **Facilitator: Jonah Morgan**
Challenges – What has gone wrong

	➢ Second challenge- Senior Leadership lack of engagement. People leaving positions and not having procedurally required ALARA Dose Advocate meeting.
(Plant) **(Representative)** **Fitzpatrick** **Caitlin Mayer**	➢ First challenge – New in Role Management team. Past 3 years, 3 different ALARA Techs. Having to Relearn the processes. ➢ Second challenge – Chemistry Department, new as well, not challenging, more recovery than proactive.
(Plant) **(Representative)** **South Texas Project** **Jonah Morgan** **Eric Hood**	➢ First challenge- Work Week Management, Emergent Dose, following the AWS, Delta Grade Work. ➢ Second challenge- Lack of Self Briefing, Radworker Performance, Lack of Management accountability for radworker.

Group – B&W, BWR's Facilitator: Jonah Morgan
Challenges – What has gone wrong

(Plant) **(Representative)** **Grand Gulf** **Erica Hunt**	➢ First challenge- N/A ➢ Second challenge- N/A

Golden Nuggets:

- **Peach Bottom – Custom FME Smears (Uni-tech) (Mohawk Safety)**
- **Davis Besse- Metal Banding replacement with Metal Zip Tyies, on high temp piping and valves.**
- **Nine Mile Point- Hold a Weekly Staff Meeting as a Team to discuss what coming up in Next Week**

Group – B&W, BWR's Facilitator: Jonah Morgan
Challenges – What has gone wrong

- **Fitzpatrick- RMS, data gets sent to text file, real time histogram from transmitter.**

- **STP-** DLA after poor performance in 2RE22. Drastic Performance change from first DLA to second

- **Grand Gulf- N/A**

Breakout Sessions
CE Units

Group – CE Units **Facilitator: Scott Leach**

Successes – What has gone right

(Plant) (Representative) **ANO** **CJ Foley**	➢ First success – New RADS room implemented. Positive recognition from NRC. ➢ Second success – Developed dose advocate committee. Use assigned actions to drive support. Supported by upper management.
(Plant) (Representative) **Barakah** **Abdulla Al Suwaidi** **John Carrara** **Iman Al Hosani** **Raymond Rouse**	➢ First success – Developed new RP program from nothing in a couple years. ➢ Second success – Developed RP outage plan. Workers are better prepared.

Group – CE Units **Facilitator: Scott Leach**

Successes – What has gone right

(Plant) **(Representative)** **Calvert Cliffs** **Roy Lopez** **John Therres**	➢ First success – ISFSI campaign – certifying neutron calcs prior to data entry. More accurate ➢ Second success –
(Plant) **(Representative)** **Byron** **Scott Leach**	➢ First success – Completed 2023 with 3.6 Rem on-line dose. Lowest in stations history. Completed two refuel outages < 30 Rem each. ➢ Second success – RP department became fully staffed in 2023.

Group – CE Units **Facilitator: Scott Leach**
Challenges – What has gone wrong

(Plant) **(Representative)** **ANO** **CJ Foley**	➢ First challenge – Changed ISFSI system. Picking up significantly more dose than previous system. Went from ~400 mr per can to 1800 mrem per can. ➢ Second challenge – Upcoming Rx head replacement. Will have to remove drives.
(Plant) **(Representative)** **Barakah** **Abdulla Al Suwaidi** **John Carrara** **Iman Al Hosani** **Raymond Rouse**	➢ First challenge – 90% new to nuclear ➢ Second challenge – Deployment of RP technologies(electronic surveys, cameras, coms)
	➢

Group – CE Units **Facilitator: Scott Leach**
Challenges – What has gone wrong

(Plant) **(Representative)** **Calvert Cliffs** **Roy Lopez** **John Therres**	➢ First challenge – Site engagement in dose ownership. ➢ Second challenge – Inconsistent neutron count during ISFSI.
(Plant) **(Representative)** **Byron** **Scott Leach**	➢ First challenge- We were short fifteen contract deconners for our last outage. Lead to higher contamination levels and increased risk. ➢ Second challenge- Forced oxidation peak was >4 mCi/ml. This was about double what we typically see during clean up.

Group – CE Units Facilitator: Scott Leach
Challenges – What has gone wrong

Golden Nuggets:

- **ANO – Require every job to have a work order. Better control of work and dose tracking.**
- **Barakah- Dose ownership.**
- **Calvert Cliffs- Have good communications between OP's, RP and Chemistry.**
- **Byron-** RP Programs Manager created the "Know Better, Do Better" program to improve HU and rad worker performance.