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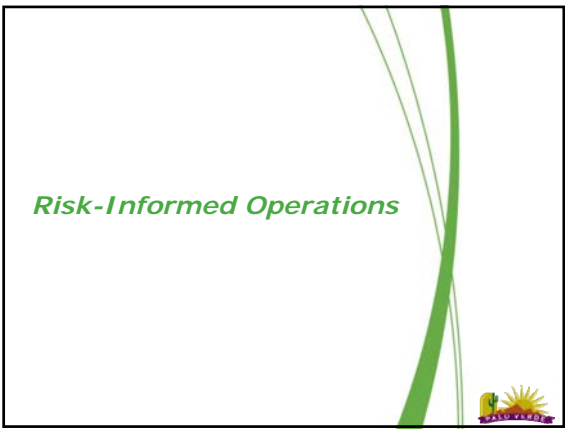
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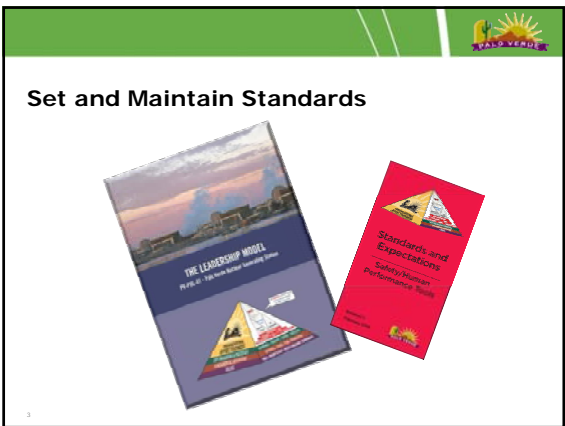
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**Focus on Nuclear Safety Every Day**

- All departments – at the beginning of every shift – start with plant status and then safety, including the unit Probabilistic Risk Assessment (PRA) risk profiles for the work week
- Plant status – including changes to risk and safety – are updated at the start of any meeting

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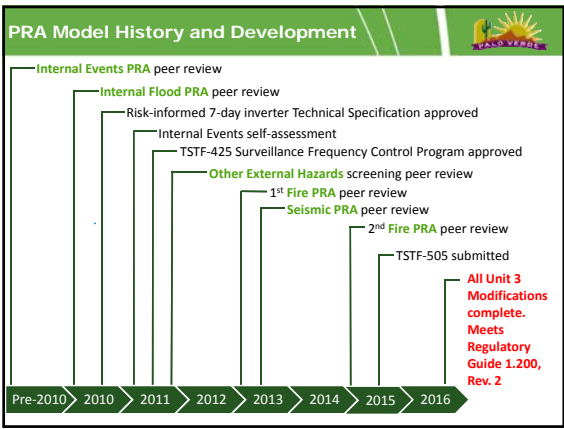
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*Use of FLEX and Portable Equipment for Risk Reduction*

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### Palo Verde FLEX Modifications and Equipment Installation

- Reactor coolant system make-up connections
- Steam generator make-up connections
- Spent fuel pool make-up headers
- Spent fuel pool instrumentation
- Class 4160-volt and 480-volt power connections for portable generator power
- FLEX equipment storage building with response equipment and tools




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### Design Modification Engagement

- PRA screening of modifications
- Modifications to support risk reduction
- Enhanced FLEX design to accommodate an operational focus




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*Delivering the Nuclear Promise Through Risk-Informed Operations*




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**Risk-Informed Efficiency Bulletins**

- 10 CFR 50.69
- Use of FLEX and Portable Equipment
- Surveillance Frequency Reduction
- Licensee Programs



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*Palo Verde Unit 3 Diesel Generator Catastrophic Failure*




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**Event**

On December 15, 2016, the Unit 3 "B" Diesel Generator experienced a catastrophic failure.

Using FLEX and portable equipment as part of a risk-informed license amendment, Palo Verde was successful in repairing and returning the Diesel Generator to operability in 57 days - and without having to take the unit offline.




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**Regulatory**

**Emergency License Amendment Requests (LARs) approved by NRC**


- 21 day deterministic LAR supplemented with risk-informed justification
- 62 day risk-informed LAR to repair, retest and return to Operability
- FLEX equipment credited for defense-in-depth
- Extensive use of compensatory measures



Transient Combustible Exclusion Zones



FLEX Equipment



Portable Equipment and Operator Actions

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**Unit 3 "B" Diesel Generator Repair**  
Read and Understand Conditions, Commitments for Continued Operations

**Overview**

**Repair Timeline**

1/10	1/13	1/14	1/17	1/18	2/1	2/2	2/9
Working Hours	Working Hours	Working Hours	Working Hours	Working Hours	Working Hours	Working Hours	Working Hours

**NRC License Conditions**

**Completed Commitments**

**Additional Systems Verification**

**Temporary Equipment**

**Site Maintenance**

**Exclusion Zones**

**Conclusion**

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**Risk and Compliance Monitoring**

**Monitoring Process**

- Partnership with OCC Leadership and Unit 3 Shift Manager
- Risk tool developed to assess and communicate

**NRC Commitment Risk Level**

Offsite Power	"A" Train Equipment & Station Black-out Generators
Portable Equipment	Oversight

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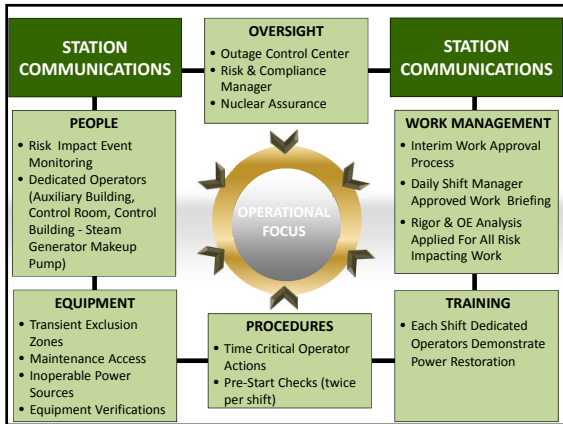
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### Setting the Standard

**Generator Rotor Balancing**      **Line Bore Machining**

**Repair Timeline** All Day Limited Availability of Reactor 2020 - Tank and Reactor

1/10	1/13	1/14	1/17	1/19	2/1	2/3	2/9
Switching Reactor	Reactor Block Moving Facilities	Adjust and Slice Base	Line Bore Machining	Control Rod Machining	Reactor's Upper & Lower Head	Finishing	Final and Close Out

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**THE LEADERSHIP MODEL**  
PV P&L 01 - Palo Verde Nuclear Generating Station

*"Life is 10% what happens to you and 90% how you CHOOSE to react to it."*

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**SAFELY** and efficiently *generate*  
electricity for the *long term*

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