

## Next Steps

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Develop policy options that will:

- Provide a risk-informed, performance-based approach to exemptions for decommissioned sites
- Establish a similar approach for rulemaking

The staff is now developing policy considerations and recommendations for the Commission to fulfill our mission requirement while making regulatory decisions in the future for:

- what approach to use in granting exemptions for decommissioned sites that is risk-informed and/or as appropriate performance-based. Similarly, we want to establish the framework in the regulations via rulemaking such that in the future, exemptions would not be necessary. The staff is weighing such issues as:

- 1) How do we apply Commission Safety Goals to these issues?
- 2) How do we apply risk thresholds to Insurance, Security, EP?
- 3) How do we apply risk probability to radiological sabotage?
- 4) Possible opportunity for legislative clarification to Price-Anderson?

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# Summary

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- SFP accident risk is low
- No immediate safety concerns
- Future Milestones
  - Policy options paper: 5/31/01
  - Action plan on existing exemptions, rulemaking plan schedule 60 days after SRM on May policy options paper

- Risk is low but study did not take radiological sabotage into account
- Zirconium fire may be possible for years after final shutdown
- Exemptions based on no chance of zirconium fire need to be re-evaluated
- No immediate action based on low likelihood of fuel uncover event resulting in offsite release. In addition, over 20 hours available to take protective or mitigative actions at currently decommissioning plants

# **Current Decommissioning Plants**

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- **Two types of events**
  - **Slow developing events**
  - **Fast drain down events**
- **Slow developing events**
  - **Hundreds of hours to take action**

Two main categories of events: (1) slow developing and (2) fast drain downs

1) Slow developing events, such as loss of cooling, siphon events, loss of offsite power

- Most of the 17 study assumptions directly bear on slow developing events to ensure staff identifies the events and brings in off-site resources when necessary.

- For all slow developing events, there is a margin of hundreds of hours to take action

- Current plants have even longer due to lower decay heat from (a) lower fuel burnup and (b) longer decay times since final shutdown.

# **Current Decommissioning Plants (cont.)**

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- **Fast drain down event - beyond design basis seismic event**
  - **Low likelihood event**
  - **Robust design**
  - **Lower decay heat levels**
- **Fast drain down event - heavy load drop**
  - **Low likelihood event**
  - **Immediate identification**
  - **More time to take action**

For fast drain downs, two events: (1) seismic events and (2) heavy load drops (100 ton range)

2) For seismic event, the pool is assumed to drain down quickly

- Pool design driven by radiation shielding requirements, which led to 4 - 6 foot thick reinforced concrete walls and floors. Industry standards dictate amount of rebar in structure. This makes pools very robust.

- The current decommissioning plants have been shut down over three years, all but one is greater than 4 years. So they have longer decay times than what we analyzed in the study, the fuel also has lower burnup than analyzed in the study which further adds to lower the decay heat levels. Therefore, even for a catastrophic seismic event, there is a lower risk of a zirconium fire.

- ALSO, with regard to the assumptions regarding off-site resources: For catastrophic beyond design basis seismic event that is needed to fail the pool, the local infrastructure would also fail. The off-site emergency response teams would be heavily engaged in rescue efforts in the surrounding area. Therefore, the assumptions that are directed to off-site resources were not credited for seismic events.

3) Heavy load drops - fast drain down

- Plant personnel would Immediately identify the event - could notify off-site resources quickly

- Time to take action during drain down, and more time is available than estimated in the study due to lower decay heat levels. Current decommissioning plants have over 20 hours after fuel uncover to take protective or mitigative actions before a zirconium fire is even possible