



RIC 2010

Plant Experience for Implementation  
of Risk-Informed Technical  
Specification Initiative 5b on  
Surveillance Frequency Control

Program  
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Exelon  
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Surveillance Frequency Control  
Program (SFCP)

- Involves relocation of most time-based surveillance frequencies to a licensee controlled program
- SFCP defined in Section 6.0, Administrative Controls
- Most periodic frequencies replaced with "in accordance with the Surveillance Frequency Control Program"
- New Licensee-controlled document created, entitled SFCP List of Surveillance Frequencies
- Development and approval of SFCP (Initiative 5b) represents a significant step in applying PRA

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SFCP Background

- Limerick was pilot for the Industry
- Frequencies removed from Tech Specs
- Scope is any periodic surveillance
  - Does not include surveillance frequencies that are event-driven, condition-based, or controlled by another existing program
- Frequency changes evaluated using risk input
- Uses NEI 04-10 Methodology
- NRC approved on September 28, 2006
- FRN 7/6/09, TSTF-425, Rev. 3, ADAMS ML090850642
- Exelon is in the process of submitting SFCP LARs for the remainder of the fleet

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## SFCP

- Exelon Parent procedure
  - Implementing guidelines
    - Selecting an STI candidate (Plant Health Committee Review)
    - STI Evaluation Form w/ guidance for completing the form
    - Engineering Evaluation of proposed STI change
    - Risk assessment of proposed STI change
    - IDP charter, qualifications, and review process
    - STI change implementation
    - STI change performance monitoring/IDP periodic review
    - List of Surveillance Frequencies Control Process
  - Surveillance Frequency Tabulation

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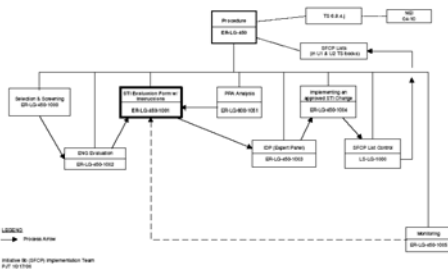
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LGS SURVEILLANCE FREQUENCY CONTROL PROGRAM (SFCP)  
Procedure / Process Diagram



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## Implementation Considerations

- Change management plan and transition team
- PORC-approved procedures
- Creation of a new Engineering program
- Training for Operations
- Certification of Independent Decision Panel (IDP) members
- Wholesale revision of Technical Specifications

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### Ongoing Considerations

- Modification process checks
- Changes to Work Control templates for testing
- Dynamic changes to the PRA model (continuous vice static model updates)
  - Online maintenance model changes
- Tracking of risk changes
- Documentation of bases, support of IDP, records management
- PRA Model revisions (standby failure rates)

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### Organizational Considerations

- Organizational Interfaces
  - Engineering
  - Maintenance
  - I&C
  - Operations
  - Licensing
  - Work Control
- Coordination among organizations is required to understand priorities and impact of changed surveillances

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### Implementation Insights

- Use Existing Processes Where Possible
  - Plant Health Committee
  - Maintenance Rule Expert Panel
  - PORC
  - Maintenance Rule performance monitoring
  - Corrective Action Process
  - Engineering Program Process
  - Impact Review Process
  - Commitment Tracking Process

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### Administrative Controls and Process Costs

- Screening/selection of candidates
- Evaluation of STI adjustments
- Presentation at IDP Panel
- PORC approval of STI changes
- Accumulation and Rebaselining

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### Implementation Insights

- Cultural understanding of risk informed processes (measurement, decision-making, feedback, and integration) increases across the organizations as implementation progresses
- Initial implementation requires a focused effort to develop the infrastructure for such a program
  - Project orientation with a team
  - Who owns the "Program"?
  - Where do we begin? What do we evaluate first?

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### Implementation Challenges

- Work optimization or burden reduction resulting from application of SFCP impacts plant organizations differently
- Ongoing program implementation requires additional personnel (not LOE)
  - ½ FTE required for ongoing program support
  - 1 FTE across Engineering to support research and analysis of proposed change
- Integration of Risk Management concepts into Engineering processes

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### PRA Technical Adequacy Documentation

- Justify how unincorporated changes to plant will be addressed (PRA model represents the as-built , as-operated plant)
- Justify departures from ASME standard cc-II requirements, including any unresolved findings/observations (should be a short list!)
- Methodology of assessing surveillance interval changes should be stated as consistent with NEI 04-10
- Address key assumptions related to surveillance intervals (if any) and how addressed
- Provide resolution of relevant peer review/self-assessment findings and observations
- Justify applicable capability category (not applicable, must meet cc-II of standard per NEI 04-10)

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### Cost to Implement a SFCP Program

- Licensing 225 hours
- Document Services 105 hours (plus 60 reams of paper)
- Engineering 500 hours
- Miscellaneous 150 hours
- Total 980 hours

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### Cost of a Proposed Frequency Change

- System Manager 160 hours
- PRA Engineer 70 hours
- Regulatory Assurance 25 hours
- IDP Coordinator 40 hours
- IDP 30 hours
- PORC 30 hours
- Miscellaneous 30 hours
- Total 385 hours

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### Recent NRC SFCP Inspection

- Two minor issues
  - Use of Surrogate Basic Events for Multiple STI evaluations. (Cascading Factors)
  - Defense-in-depth may require more than just performance monitoring.
- Each issue to be resolved with changes to the STI procedures.

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### Safety Benefits

- Potential to affect all aspects of plant operation
  - Reduced reactivity management events
  - Dose reduction
  - Resource optimization
  - Work Management simplification
    - Planning
    - Configuration risk
  - Reduced production risk (initiating events)

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### Closing Thoughts

- Broad strategic safety benefits
- Station efficiency and resource allocation improved
- Process comprehensively evaluates commitments and experience prior to implementation
- Infrastructure developed can be applied to other risk informed initiatives (10CFR50.69)
- Cultural understanding of risk informed processes (measurement, decision-making, feedback) increased across organizations

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