External Interface Risk

- External risks result from circumstances, conditions or events that are not under the direct control of facility management.
- Contingency plans will be developed for systems determined to represent a High or Medium risk.
- Can be identified using “boundary analysis techniques” with subject matter experts from organizations such as operations, engineering, chemistry, radiation protection, emergency preparedness.
External Interfaces Affecting Plant Operations

Offsite Power Availability/Stability
loss of off-site power, grid instability, voltage/frequency swings

Critical Services
- telephones, microwave, satellite, networks, police, firefighting, select vendors, security, potable water, sewer, etc.

Safe and Reliable Plant Operations

Critical Supplies
- diesel fuel, hydrogen, nitrogen, resins, consumables

Emergency Plan Services and Equipment
- pagers, radios, sirens, meteorology, state & local agencies
Contingency Planning for External Facility Risks

1. Perform boundary analysis to identify critical interfaces with key organizations.
2. Identify High/Medium Risk items.
3. Evaluate vulnerability of the external interface to Y2K induced events.
4. Determine confidence in external agency to respond to Y2K induced event.
5. Evaluate the need to develop a Risk Mitigation Strategy. If not, document basis in the Risk Evaluation section of Contingency Plan Form. This provides a record of the rationale for management awareness and documentation for future use.
6. Develop Mitigation Strategy: alternate suppliers, back-up equipment, planned recovery steps, implementation triggers.
7. Validate & approve Contingency Plan.

Input to Integrated Contingency Plan

Response Ability

Procedure Adequacy

Yes

No

Vulnerability

Risk Type

Evaluate potential impact on safe and continued operation.
Assign risk priority.

Evaluate potential impact on safe and continued operation.
Assign risk priority.

Do procedures exist to mitigate failure?

Determine adequacy for failure scenario.
**External Boundary Analysis**

- Objective is to identify those items that have the potential to impact safe and reliable operations of the facility.
- Items, signals, information or data that cross facility boundaries are candidates for evaluation. (examples: transmission lines, communications, consumables and services)
- Can be identified through the use of “table top seminars” with subject matter experts, review of existing procedures, and review of existing contingency plans.
- For supplies and services, consideration should be given to looking further down the supply chain for vulnerability to disruption from a Y2K induced event.
Contingency Plan Content

- Item Description
- Risk Priority
- Responsible Person
- Risk Evaluation Summary
- Mitigation Strategy
- Period of Vulnerability
- Implementation Timing
- Resources
- Subject Matter Experts
- Training
- Validation
- Approval
Loss of Off-Site Power (LOOP)
Potential Y2K-induced Event

While CP&L can take steps to ensure its generating plants continue to operate during key rollover dates, other generating stations and large loads such as major industrial customers and municipalities represent significant supply/loads on the electric power grid.

A sudden loss of either generation or load could cause grid voltage/frequency swings which could cause a nuclear plant to suddenly trip.
Risk Evaluation Summary

There is a small potential for loss of off-site power due to single or multiple Y2K-induced failures at other generating facilities or loads connected to the grid. While plants are designed for such occurrences, this represents potential challenges to plant operations personnel in keeping the plant on-line during grid fluctuations.
Mitigation Strategy

Station additional operations personnel on shift from 1900 Dec 31, 1999 to 0700 Jan 1, 2000 and from 1900 Feb 28, 2000 to 0700 Mar 1, 2000 as follows:
* One SRO in each unit’s Main Control Room to monitor grid voltage and generator parameters.
* One additional Outside Area Auxiliary Operator in the Emergency Diesel Generator Bldg. to monitor diesel starts if necessary.

Responsibility: Supervisor, OPS Support
Timing: December 21, 1999

Coordinate with the load dispatcher to reduce power to XX% on both units from 2300 on Dec 31, 1999 to 0400 on Jan 1 to provide additional operating margin in case of grid voltage/frequency fluctuations.

Responsibility: BOP SRO on shift
Timing: December 31, 1999
Mitigation Strategy (cont’d)

In case of loss of grid, the station will execute the procedures for abnormal system frequency/voltage or loss-of-offsite power. Fourth quarter Licensed Operator Requalification (LOR) will include training on plant response procedures to these events. (see training requirements)

Responsibility: Manager, OPS Training
Timing:  Fourth Quarter 1999
Contingency Planning Implementation

Period of Vulnerability:
Dec 31, 1999-Jan 1, 2000; Feb 28, 2000-Mar 1, 2000

Implementation Timing:
See Mitigation Strategy for specific time frames.

Resource Requirements:
Two additional on-shift SROs and one additional AO

Subject Matter Expert:
John Smith
Contingency Plan Implementation (cont’d)

Training Required:
Each operations crew will review the following procedures during LOR in the fourth quarter of 1999:

AOP-22, “Abnormal System Frequency”, AOP-36.1, “Loss of Any 4Kv Buses or 480v E-Buses” and AOP-36.2, Station Blackout”. Principal crews scheduled to be on shift during vulnerability periods also will conduct simulator training involving the loss-of-offsite power.

Exit Strategy:
Follow guidance contained in approved plant procedures.
Laboratory Analysis of Charcoal Filters in Emergency Filtration System
Potential Y2K-induced Event

Plant Technical Specifications (4.7.6, 4.7.7 & 4.9.12) require periodic analysis of charcoal filters used in the Emergency Filtration Units for the Control Room, the Reactor Auxiliary Bldg & the Fuel Handling Bldg. Testing is required every 18 months or 720 hours of system operation.

Analysis is performed by sending samples to an off-site laboratory. Results are required to be analyzed within 31 days of collecting the sample. Should sampling be required during a key rollover date and if the vendor is impacted by a Y2K-induced event, there is a potential to impact adherence with Technical Specifications.

Risk Evaluation Summary

Failure to comply with Technical Specification requirements has the potential to impact the operability of safety related plant equipment. The surveillance frequency is both schedule and event driven, depending upon operation of the plant systems. Should the need arise to conduct charcoal filter testing on or about a key rollover date, the outside vendor has the potential to cause plant shutdown.
**Mitigation Strategy**

A review of the scheduled dates for the above TS surveillances should be performed to determine the proximity to key rollover dates identified below. Where feasible, sampling and analysis will be performed prior to these dates.

**Responsibility:** J.B. Smith, HVAC Engineer  
**Timing:** October 1, 1999

A review of the vendor’s Y2K program shall be done by Procurement. If confidence is not high on their program and their ability to perform required analyses, an alternate service source will be established.

**Responsibility:** F.A. Jones, Procurement Specialist  
**Timing:** October 1, 1999
Contingency Plan Implementation

Period of Vulnerability:
Dec 31, 1999-Jan 1, 2000; Feb 28, 2000-Mar 1, 2000

Implementation Timing:
Oct 1, 1999; Follow-up actions as necessary should be completed by Dec 1, 1999

Resource Requirements:
System Engineer and Procurement Specialist

Subject Matter Expert:
L.B. Smith

Training Required: None
Exit Strategy: None
Summary

• Contingency planning for external interfaces is best accomplished with plant personnel using “Table Top Seminars”. A key element is identification using boundary analysis techniques.

• Consider organizational boundaries not just event based scenarios.

• Mitigation strategies, in many cases, are already in place, e.g. procedures, back-up suppliers, etc.

• Expect refresher training or additional staffing during key rollover dates.