

Inventory Completeness and Categorization

Ontario Hydro Nuclear
Year 2000 Project

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Overview

- Objective of Inventory Completeness
- Inventory Process Overview
- Categorization
 - Safety Related Digital Asset List
- Results
- Ongoing work



Objective of Inventory Completeness

- A complete and accurate digital asset inventory
 - Reduce risk associated with missed assets
 - Demonstrate due diligence
- A systematic and traceable inventory process involving:
 - Initial identification of digital assets
 - Asset discovery
 - Inventory process completion

Inventory Process Overview

- Initial identification of digital assets
 - Surveys to all asset owners
 - Searches of manufacturer and design manuals
- Asset discovery
 - Prioritize discovery areas
 - Identify sources of information
 - Perform searches
- Inventory process completion

Prioritization of Discovery Areas

1) Special Safety Systems

2) Other Safety Related Systems

3) Other Systems

- Areas of plant with no inventory
- Process systems and locations with no inventory
- Remaining systems and locations

Sources of Information

- Station Drawings
- Material & Equipment Databases
- Engineering Change Notices
- Field Checks
- People (Maintenance, Operation, Engineering)

Discovery Process

- Consistent method with traceability (checklist)
- Focus on I&C equipment
- Use field checks and discussions with System Responsible Engineers and maintenance staff
- Pay special attention to areas where new assets are being discovered

Example Methodology

- Using checklist to record progress and findings:
 - Get drawings for a system (USI)
 - Highlight possible digital assets
 - Review Engineering change packages
 - Review manufacturer, design, and op manuals
 - Perform field check
 - Interview operating and engineering staff
 - Complete new asset identification forms
 - Submit system search package for USI
 - Submit new assets for renovation/certification

Inventory Process Completion

- Quality and completeness review of asset information
 - Comparison of asset information between plants
 - Resolution of comparison discrepancies
- Asset Owner Signoff

Inventory Categorization

For every asset identified, perform:

- business impact categorization
 - high/medium/low impact
- safety categorization
 - Safety Related Digital Asset (SRDA) list
- technical assessment



Safety Related Digital Asset (SRDA) List

- Safety Related Digital Assets are:
 - Digital assets which are part of systems on the stations' safety related systems list, and are without effective fault-mitigating circumstances
 - Digital assets that are deemed by the asset owner to be safety related assets

- OHN has in place a process to ensure that:
 - all the safety related assets are identified
 - there is consistency
 - any discrepancies are understood

SRDA List Process

- From inventory, extract:
 - all assets with a business impact rated ‘High - Impact on Safety’
 - all assets under any safety related USI
- Review list with the System Responsible Engineer to determine:
 - whether any of the assets have effective fault-mitigating circumstances to justify removal from list
 - any assets not included, that should be
 - any additional assets that owner wants included

SRDA List Process (cont.)

- Compare plant lists, hold discussions to resolve differences
- Obtain concurrence of Nuclear Safety Managers
- Assign each system to one of three categories:
 - Special Safety Systems (SSS)
 - Failure could challenge a SSS
 - Other Safety Related

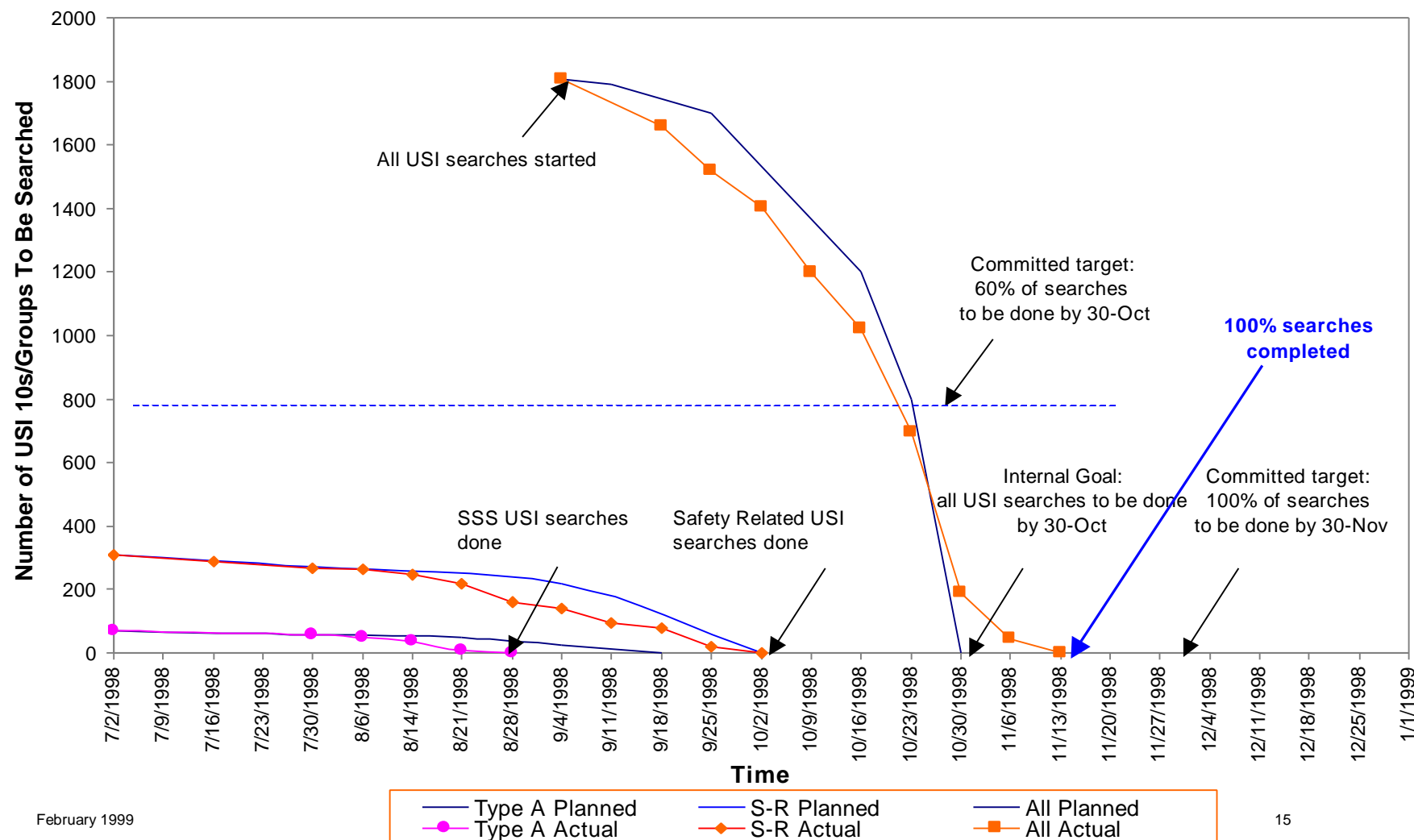
Results

Safety Related Digital Systems

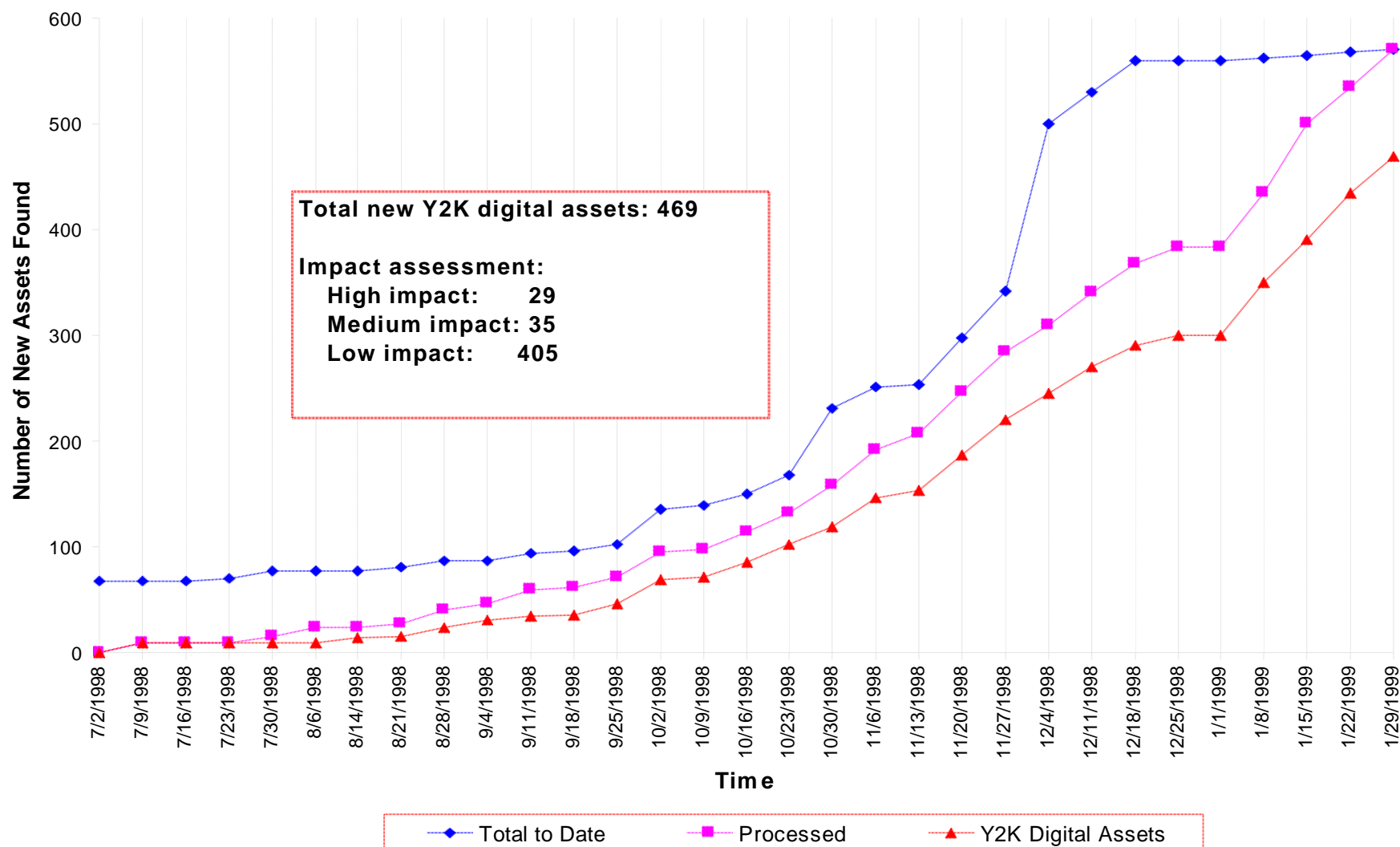
| Site | SSS | Failure Could Challenge SSS | Safety Related |
|------------|------|--------------------------------|----------------|
| Bruce | None | 4 | 12 |
| Darlington | 4 | 2 | 16 |
| Pickering | 2 | 6 | 12 |



Pickering Process Assets: Inventory Searches for All USIs



Pickering Process Assets: New Asset Discovery



Inventory Numbers - Pickering

| | Inventory Completeness Assets | Total Assets |
|--------|----------------------------------|--------------|
| High | 29 | 152 |
| Medium | 35 | 196 |
| Low | 405 | 1331 |
| Total | 469 | 1679 |

Asset Discovery Experience

- Many of the new assets were discovered in:
 - Skid mounted equipment
 - Loose instrumentation
 - Engineering changes not installed
 - New systems
- Equipment information is not available from one source
- Systematic checks using consistent approach critical

Ongoing work

- Safeguards in Plant Procedures
 - Procurement, engineering, etc.
- Periodic checking
 - New purchases
 - Engineering changes
 - Temporary changes
- Awareness training of staff

Closing

*An accurate and complete inventory is
fundamental to the entire Y2K process.*



Inventory Completeness and Skiing: One and the Same !

