

# Canadian Light Source

*The brightest light in Canada*



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TEN YEARS OF DISCOVERY

# The New View of Risk

*Risk Management Means Different Things to Different People*



**Opportunity**



**Uncertainty**



**Hazard**



• Exploiting the 'upside' of risk

• Variance from Expectations

• Event driven risk ...risk of bad things happening

# Enterprise Risk Management

## Identification of Risks

- **Risk** = identified as having a significant impact on CLSI's ability to achieve its objectives
- Interviews with management, Board members & key stakeholders in 2010 (Complete re-review with Management in 2014)
- Identified risks were 'clustered' into a raw registry that identified the risk factors and causes
- Identified existing mitigations



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# Risk Assessments

Each risk was rated based on the following criteria:

- Impact by Category:
  - » Financial
  - » Operational
  - » Compliance
  - » Reputational
  - » Strategic
- Likelihood
  - » *Based on the possibility that a risk could occur within the next 2 years*



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# Risk Impact Rating Scale

	<b>Financial</b>	<b>Operational</b>	<b>Compliance</b>	<b>Reputational</b>	<b>Strategic</b>
<b>Insignificant</b>	Financial impact on CLS is likely to be below \$50,000 (inclusive of material, equipment & labour)	Minimal impact on CLSI's operational objectives <ul style="list-style-type: none"> <li>Rectified within 1 shift (8 hours).</li> <li>Allocation of staff to complete current operational objectives is not affected</li> </ul>	Minimal impact on CLSI's compliance with Federal, Provincial and Local laws and regulations	Minimal impact on CLSI's reputation	Minimal impact on CLSI's Strategic goals and ability to achieve them.
<b>Minor</b>	Financial impact on CLS is likely to be between xxxxxxx and xxxxxxx (inclusive of material, equipment & labour)	Minor impact on CLSI's operational objectives <ul style="list-style-type: none"> <li>Description, examples.</li> <li>Description, examples</li> </ul>	Minor impact on CLSI's compliance with Federal, Provincial and Local laws and regulations: For example: <ul style="list-style-type: none"> <li>Minor infraction with no fine, reputation loss or physical loss</li> </ul>	Minor impact on CLSI's reputation. For example: <ul style="list-style-type: none"> <li>Description, examples.</li> <li>Description, examples</li> </ul>	Minor impact on CLSI's Strategic goals and ability to achieve them. For example: <ul style="list-style-type: none"> <li>Description, examples.</li> <li>Description, examples</li> </ul>
<b>Moderate</b>	Financial impact on CLS is likely to be between xxxxxxx and xxxxxxx (inclusive of material, equipment & labour)	Moderate impact on CLSI's operational objectives; for example: <ul style="list-style-type: none"> <li>Description, examples.</li> <li>Description, examples</li> </ul>	Moderate impact on CLSI's compliance with Federal, Provincial and Local laws and regulations: For example: <ul style="list-style-type: none"> <li>Description, examples.</li> <li>Description, examples</li> </ul>	Moderate impact on CLSI's reputation. For example: <ul style="list-style-type: none"> <li>Description, examples.</li> <li>Description, examples</li> </ul>	Moderate impact on CLSI's Strategic goals and ability to achieve them. For example: <ul style="list-style-type: none"> <li>Description, examples.</li> <li>Description, examples</li> </ul>
<b>Major</b>	Financial impact on CLS is likely to be between xxxxxxx and xxxxxxx (inclusive of material, equipment & labour)	Major impact on CLSI's operational objectives; for example: <ul style="list-style-type: none"> <li>Description, examples.</li> <li>Description, examples</li> </ul>	Major impact on CLSI's compliance with Federal, Provincial and Local laws and regulations; for example: <ul style="list-style-type: none"> <li>Description, examples.</li> <li>Description, examples</li> </ul>	Major impact on CLSI's reputation. For example: <ul style="list-style-type: none"> <li>Description, examples.</li> <li>Description, examples</li> </ul>	Major impact on CLSI's Strategic goals and ability to achieve them. For example: <ul style="list-style-type: none"> <li>Description, examples.</li> <li>Description, examples</li> </ul>
<b>Extreme</b>	Financial impact on CLS is likely to exceed \$xxxxx (inclusive of material, equipment & labour)	Significant impact on CLSI's operational objectives; for example: <ul style="list-style-type: none"> <li>Description, examples.</li> <li>Description, examples</li> </ul>	Significant impact on CLSI's compliance with Federal, Provincial and Local laws and regulations; for example: <ul style="list-style-type: none"> <li>Description, examples.</li> <li>Description, examples</li> </ul>	Significant impact on CLSI's reputation. For example: <ul style="list-style-type: none"> <li>Description, examples.</li> <li>Description, examples</li> </ul>	Significant impact on CLSI's Strategic goals and ability to achieve them. For example: <ul style="list-style-type: none"> <li>Description, examples.</li> <li>Description, examples</li> </ul>



# CLS Risk Ratings

LIKELIHOOD					
IMPACT	Rare	Unlikely	Possible	Likely	Almost Certain
Extreme	1			1	3
Major		4	4	2	1
Moderate	2	1	2	2	
Minor					
Insignificant					

## Legend:

	<b>Very High</b>	Requires detailed research, planning and decision making at senior levels of management, may require attention from the Board of Directors.
	<b>High</b>	Critical importance to the success of CLSI in meeting its financial and non-financial goals. Senior management attention and action needed.
	<b>Medium</b>	Important but not critical to the success of CLSI in meeting its financial and non-financial goals. Management control and responsibility must be specified.
	<b>Low</b>	Risk does not have a material bearing to the success of CLSI in meeting its financial and non-financial goals. Can be managed by routine controls and procedures.

# Action Strategies to Address Risks

- Action strategies & plans have been developed to address risks
- Integrated into Management Planning and decision making
- Continual review, re-rating and updating action plans



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# Example: Key System Failure

## Risk Description/Risk Factors

The potential for CLS's key technical systems to not function correctly or to break down completely, resulting in downtime and additional cost.

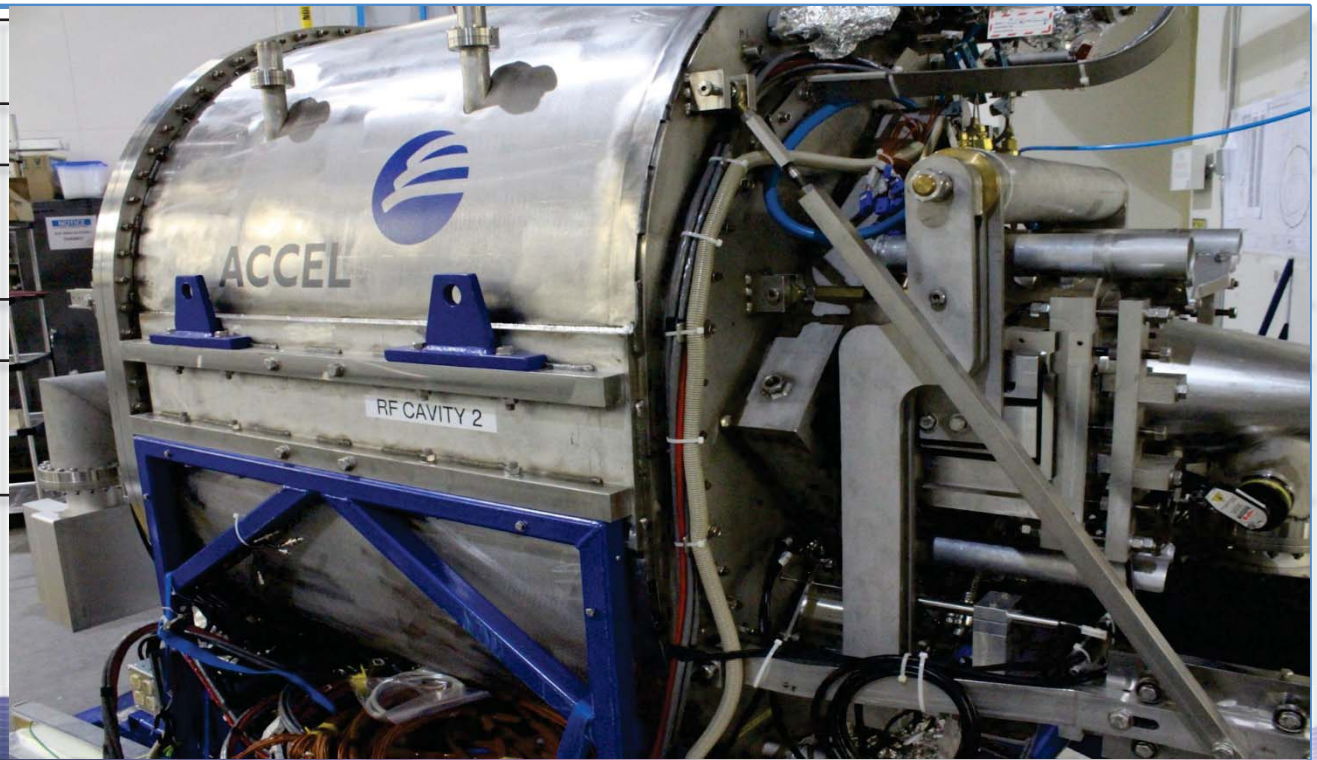
### Likelihood rating

Almost Certain

### Comment

This risk is currently happening, there were a number of major system failures, unplanned shutdowns in 2012 & 2013.

Risk Impact	Rating
Financial	Major
Operational	Extreme
Compliance	Minor
Reputational	Major
Strategic	Major





# Assess & Prioritize Key Systems

- System --> subsystem-->components:
  - Consideration of the impact of failure (identify downtime)
  - Likelihood of failure
  - Current mitigation strategies if a failure occurs
    - Spares, lead time to procure, redundancy
    - Overall Maintenance Plan



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# Link to Strategic Planning

- Impact on User requirements
- Scientific excellence in Machine development



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# CLS Risk Process

