Architecting for the e-Record:

Canadian Nuclear Safety Commission (CNSC)

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Introduction

- E-Records Framework project was initiated in 2008;
- Drivers for the project:
  - ✓ Information needs of CNSC staff in support of business priorities
  - ✓ Demand by CNSC licensees and stakeholders (e-filing and e-transactions)
  - ✓ Improve IM practices
  - ✓ Development of new CNSC IT solutions (EDRM and data applications)
  - ✓ Respond to Government of Canada requirements such as the new Recordkeeping Directive

What is the e-Records Framework?

- A set of requirements, standards, policies, procedures, tools and systems to ensure that the CNSC is meeting its business, legal and Government of Canada obligations to safeguard a comprehensive record of its business activities.

Expected Outcomes – e-Records Framework Project

1. CNSC accepts e-records as official records, retaining paper only where required for specific business, legal or policy considerations.
2. CNSC protects its digital information assets throughout their lifecycle.
3. The CNSC focuses its e-records management efforts on enduring business records, and puts in place effective measures to dispose of unnecessary information resources.
4. Processes for the management of e-records are efficient, well documented and effectively communicated to CNSC staff.

Expected Outcomes – e-Records Framework Project

5. CNSC maximizes the likelihood that key enduring business records managed in electronic format will be admissible in a court of law or other legal proceeding.

Why is this important to the CNSC?

- CNSC is a federal regulatory agency, regulating all nuclear facilities and activities in Canada:
  - Mission is to regulate the use of nuclear energy and materials to protect the health, safety and security of Canadians and the environment; and to respect Canada's international commitments on the peaceful use of nuclear energy.
- Quasi-judicial body – Commission Tribunal makes decisions on the licensing of major nuclear facilities through a public hearing process.

IM at the CNSC

- CNSC is a Court of Record (*Nuclear Safety and Control Act*);
- Strong tradition of paper records management;
- Receive high volumes of document submissions from licensees for regulatory activities;
- Introduction of new business data applications supporting licensing and compliance, as well as planning, monitoring and reporting;
- Nature of the business = extremely long/indefinite retention periods;
- Major licensees have rigorous document management programs of their own;
- Ongoing need to balance transparency with effective stewardship of sensitive information.

IM at the CNSC (cont'd)

- EDRM solution (RDIMS) implementation completed in 2007 – corporate repository for unstructured official information;
- Many legacy data applications, none of which were developed as systems of record;
- Some licensees submit information in digital formats, but not standardized;
- Strategic priorities of the CNSC necessitating the development of new IT systems in support of e-business;
- Nascent IM/IT architecture program;
- Paper official records are all scanned, though both hard copy and imaged version are retained and used;

E-Records Framework – Project Activities

1. Planning (scope, approach)
2. Conduct an analysis of relevant legislation, policy, and Canadian/international standards;
3. Document requirements based on relevant sources;
4. Assess CNSC as-is against requirements;
5. Develop an action plan to address gaps and deficiencies;
6. Initiate/complete items within the plan.

Guidance on Requirements

- *Nuclear Safety and Control Act*
- *CNSC Rules of Procedure (SOR/2000-211)*
- *Canada Evidence Act*
- *Library and Archives of Canada Act*
- *PIPEDA Part 2*
- *Secure Electronic Signature Regulations (SOR 2005-30)*
- Government of Canada Recordkeeping Directive
- Policy on Information Management
- CAN/CGSB 72.34 - Electronic Records as Documentary Evidence
- ISO 15489 – Information and Documentation – Records Management
- ISO 23081-1 – Information and Documentation – Metadata for Records

New Requirements – Recordkeeping Directive

Requirement	CNSC
Institutions must identify information resources of business value	Which of our CNSC records have business value? How do we determine this in a consistent manner?
Resources of business value must be captured in an “official” repository.	What are our “official” repositories?
Within a repository, there must be sufficient control for the resources to be authentic, reliable, accessible and usable on a continuing basis.	Do CNSC systems deemed to be official repositories have the required functionality to ensure authenticity, reliability, accessibility and usability on a continuing basis?
Institutions must establish and implement key methodologies, mechanisms and tools.	What metadata, controlled vocabularies, taxonomies, etc. are required? Which business records, if any, need to be retained in paper?

Recordkeeping Directive (cont'd)

- **What are information resources of business value?**
  Published and unpublished materials, regardless of medium or form, that are created or acquired because they enable and document decision-making in support of programs, services and ongoing operations, and support departmental reporting, performance and accountability requirements.
  - Business processes ➔business information
- **What is an official repository?**
  A preservation environment for information resources of business value. It includes specified physical or electronic storage space and the associated infrastructure required for its maintenance. Business rules for the management of the information resources captured in a repository need to be established, and there must be sufficient control for the resources to be authentic, reliable, accessible and usable on a continuing basis.
  - Business information ➔ information systems

E-Records Framework Action Plan

- Action Plan was developed to address gaps and deficiencies. Action items were grouped into the following 6 areas:

1. Governance;
2. Information architecture;
3. Tools and enablers;
4. Audit and quality assurance;
5. Policies and procedures
6. Training and awareness.

Information Architecture – Action Items

- Develop methodology and analyze business processes (as-is/to-be) in order to identify information of business value (as per requirements of Recordkeeping Directive);
- Identify CNSC repositories/systems of record, and document which systems are deemed to be the authoritative source for business information:
  - Establish requirements for a CNSC trusted repository;
  - Review systems and assess against requirements for a trusted repository;
  - Build requirements for trusted repository into new system development initiatives.

Info Architecture – Action Items

- Define and implement standard formats for third party document submissions;
- Determine CNSC acceptable formats for long-term preservation;
- Establish corporate metadata standard for repositories managing business records;
- Establish requirements and approach for e-signature and authentication;
- Ensure processes and approvals for IM/IT initiatives address e-record requirements throughout the systems development life cycle (SDLC).

Other considerations…

- Small project (budget and resources)
- Tight integration between IM and IT teams is essential
- Iterative approach – incremental improvements rather than one major initiative
- Establish key conceptual models
- Embed information architecture in application development initiatives
- Embed e-record considerations within enterprise architecture program.