



Invitation To Participate in International Cable Database For Aging Management

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Cable Working Group

Managed by



Agence pour l'énergie nucléaire
Nuclear Energy Agency



Sponsored by

NISA

Nuclear and Industrial Safety Agency

Participant countries

| | |
|-------------|--|
| BELGIUM | SCK-CEN (Belgian Nuclear Research Centre) |
| CANADA | Canadian Nuclear Safety Commission |
| CZECH REP. | NRI Rez plc (Nuclear Research Institute) |
| FINLAND | STUK (Radiation and Nuclear safety Authority) |
| FRANCE | IRSN (Institut de Radioprotection et de Surete Nucleaire) |
| GERMANY | GRS (Gesellschaft fur Anlagen-und Reaktorsicherheit) mbh |
| | AREVA / NTR-G |
| JAPAN | Waseda University |
| | Ministry of Economy, Trade and Industry, Nuclear and Industrial Safety Agency (NISA) |
| | Japan Atomic Energy Agency (JAEA) |
| | Japan Nuclear Energy Safety Organization (JNES) |
| | Nuclear Engineering, Ltd.(NEL) |
| NORWAY | Computerized Operation Support Systems Division & OECD Halden Reactor Project |
| SLOVAK REP. | VUJE Inc. |
| UKRAINE | STATE NUCLEAR REGULATORY COMMITTEE OF UKRAINE |
| SWEDEN | Swedish Radiation Safety Authority |
| SPAIN | Consejo de Seguridad Nuclear |
| USA | United States Nuclear Regulatory Commission (USNRC) |

Benefits of Participation

Web-based International Forum for Cable Aging Management

- Share knowledge on the qualification of cables
- Feedback on cable performance
- Techniques and Operating experience for cable monitoring/testing
- Temporary solutions for cable life extension
- Regulatory Requirements and Industry Guidance on cables

Scope of the Cable Database

- The Cable database covers the following
 - safety related cables that support Emergency Core Cooling
 - cables important to safety ie., other cables desirable to prevent or mitigate design bases events
 - cables important to plant operation ie., cables that could fail and cause a plant trip or reduction in plant power
- Power and Control cables with voltage ratings up to 15 kV AC and 500V DC, including Instrumentation & Control cables
- Cables Types: Coaxial, Triaxial, Fiber optic and hybrid
- Insulation Types: XLPE, SiR, PVC, EPR, CSPE, EPDM, EVA
- Conductor Material: copper, copper-tin, aluminum, glass, pmma and other

Cable Database Structure

- The Cable database is a relational database, operating on MySQL software The data entry to the database is managed via tables, and roll down menus.
- Database searches and applications can be performed through queries
- The data base screens are as follows:
 - **Part 1. Technical data of cable**
 - **Part 2. Cable maintenance data /Condition monitoring**
 - **Part 3. Data for the cable failure events**
 - **Part 4. Cable environmental qualification code data**
 - **Part 5. Plant and cable environmental condition**
 - **Part 6. Mitigation of cable- installed environment**
 - **Part 7. Cable replacement**
 - **Part 8. Regulatory information for cable**
 - **Part 9. Description of condition monitoring techniques**

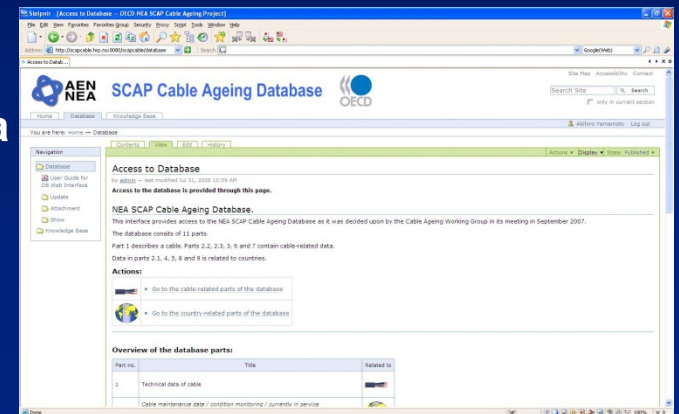


Fig.1 Database Opening Screen

Contents of the Database

Part 1. Technical data of cable

- Specification of insulation material, conductor size, rated voltage, cable type and manufacturer.
- Description of the operating environmental condition, design pressure, temperature, humidity, codes and standards for qualification

Part 2. Cable maintenance data / Condition monitoring

- Cable inspection and in-service condition monitoring methods, cable sampling and cable repairing information.

Part 3. Data for the cable failure events

- Information on real cable failure events. A narrative description of the event, root causes, and the countermeasures.

Contents of the Database

Part 4. Cable environmental qualification code data

- Describes the summary main results of the qualification tests and the full test report when available

Part 5. Plant and cable environmental condition

- Selected areas of the plant monitored for temperature, radiation etc.,

Part 6. Mitigation of cable- installed environment

- Information regarding mitigation methods to reduce the severity of the cable environment.

Contents of the Database

Part 7. Cable replacement

- Describes the reasons for cable replacement: Degradation, Failed, Modification, End of qualified life etc.,

Field 8. Regulatory information for cable / Continued confirmatory and exploratory research

- Regulatory requirements for cable ageing management, regulatory guides and results of previous safety evaluations. Industry standards for meeting the regulatory requirements.

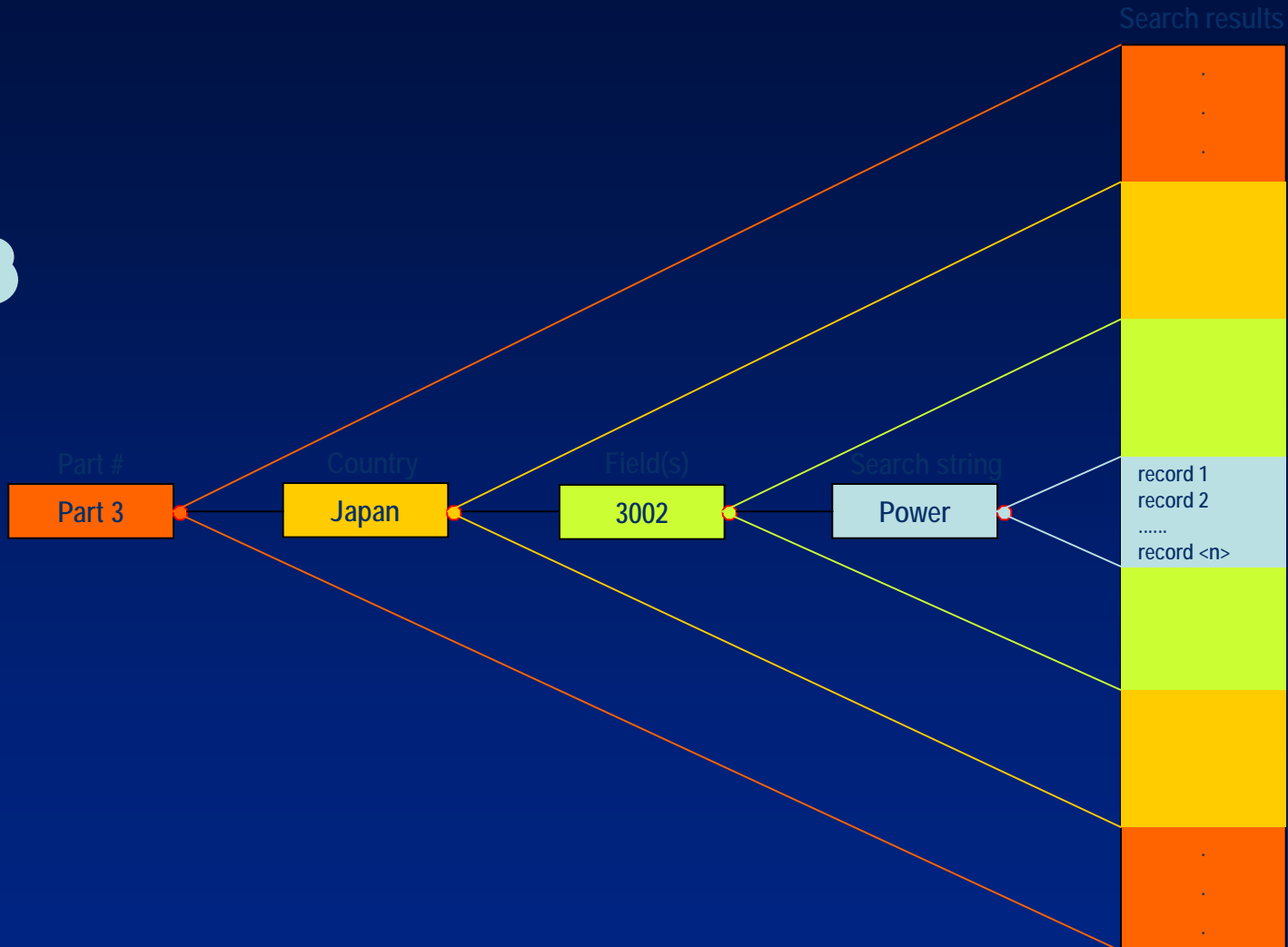
Part 9. Description of condition monitoring techniques

- A description of the condition monitoring method, the principle of monitoring and a description of the monitoring technique.
- Aging indicators, such as elongation at break and the monitoring data, along with its acceptance criteria.

Access Policy – Trial Period

| | Operator | National representative | Clearinghouse |
|--------------------|-----------------|--------------------------------|----------------------|
| View data | All | All | All |
| Update data | Own data | Own country | All |
| Insert data | Own data | Own country | All |
| Delete data | No | No | All |

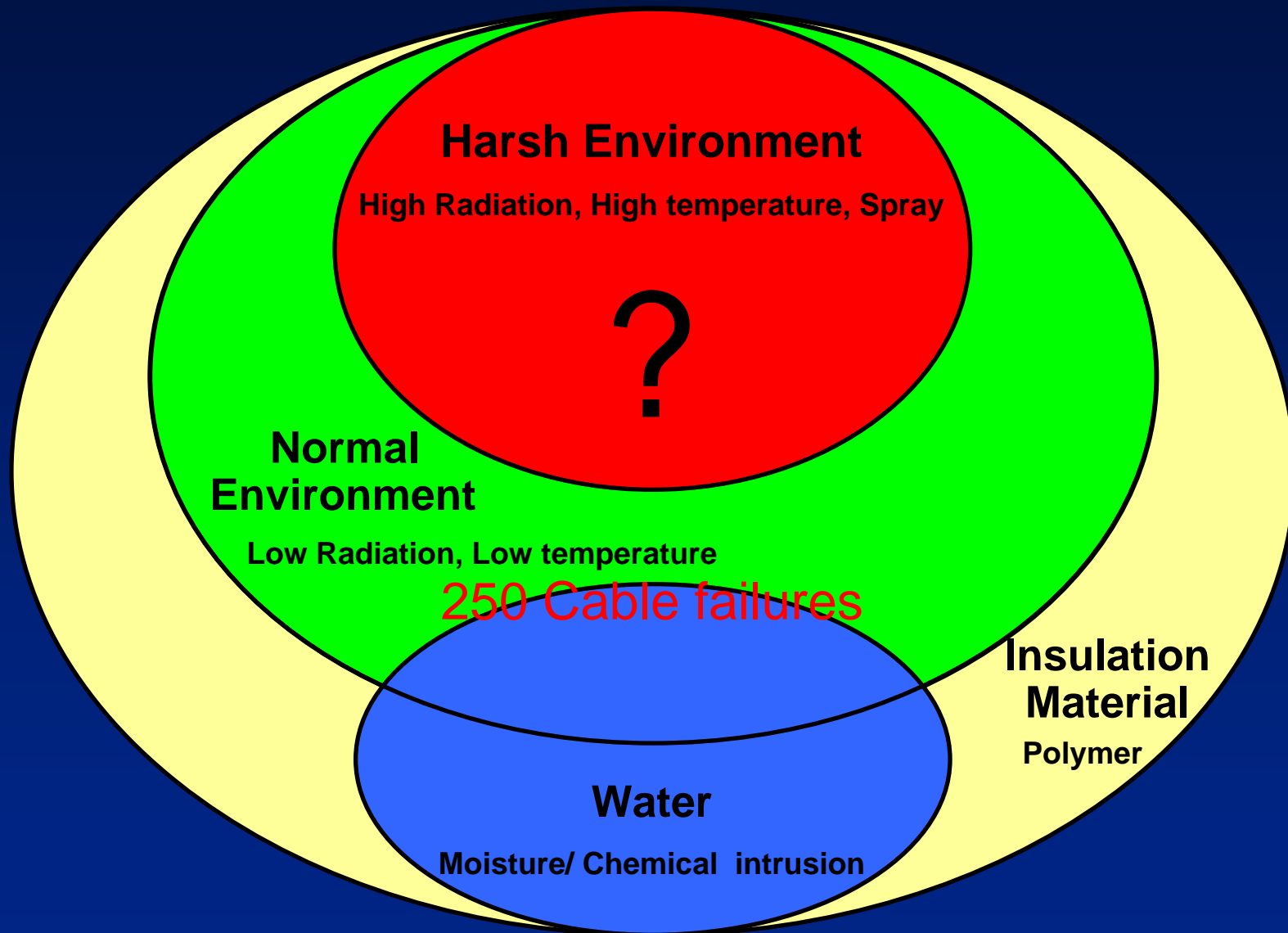
Web interface for DB - Search capabilities



Report Content

- Knowledge Base
 - Derived from data base to high light important lessons in respective countries
- Commendable Practices
 - Selected Knowledge Base items assessed to be suitable for action

Factors for Acceleration of Cable failures



The screenshot shows a web browser window displaying the SCAP Cable Ageing Database. The browser title is "Sleipnir - [Show - OECD-NEA SCAP Cable Ageing Project]". The address bar shows "http://scapcable.hrp.no:8080/scapcable/database/St". The website header includes the AEN NEA logo, the title "SCAP Cable Ageing Database", and the OECD logo. There are navigation tabs for "Home", "Database", and "Knowledge Base". A search bar is located in the top right corner. The main content area is titled "Show country data" and includes a table with "Country: Japan" and "Acronym: JP". Below this, there is a section for "Part 8: Regulatory information for cable / continued confirmatory and exploratory research". The page also features a "Navigation" sidebar with links to "Database" and "Knowledge Base", a "Mode" section with "SHOW" selected, and an "Actions" section with various options like "Update country data" and "List all cables". At the bottom, there are "Cable related links" and "Country related links" sections.

Navigation

Mode

Actions

Cable and Country related links

Selected country

Selected PART

Item list

Attachment (Link)

Detail information

Enrollment

- A letter to the National Representative (a member of the regulatory staff) from a senior manager agreeing to the terms and conditions
- For USA
 - Thomas Koshy, Chief, MEEB/DE, Office of Research, USNRC, Washington, D.C, 20555
Thomas.Koshy@nrc.gov
 - For Other Countries –
Contact: akihiro.yamamoto@oecd.org

Input Content

- For copy righted / propriety material, please provide an English summary and provide contact for additional information
- For standards, please provide just the table of contents and contact to obtain a copy
- For test records, please provide a summary
- Provide only well supported conclusions in operating experience

Terms & Conditions

- Information in this database is **CONFIDENTIAL** and therefore not for public release.
- Use of this database is intended for project member organizations that have participated in its development and provided data.
- Use of this data and its results are the **SOLE RESPONSIBILITY** of the user. The user may want to authenticate the data from the original source and verify conclusions independently for complying with licensing or other legal requirements in the respective countries.

Terms & Conditions

- This information shall be for the authorized participants' technical assessments and it shall not be sold to any third party for commercial use.
- Anonymous data provided is expected to remain anonymous, and no attempt should be made to recognize its source, except through mutual consent authorized by the NEA.
- National representatives must ensure proper distribution, appropriate use of the data and exercise authority to remove access when any unacceptable use is observed within their country.
- Any plant-specific information utilized in publications and presentations given outside this user community shall be done only with the expressed consent of the data owner.

Terms & Conditions

- Any assessment data or publications generated using this database would require prior distribution with a 15-day notice for comments to all participants. Such publications would become part of the permanent records in the database
- Following the trial period, the website access will be limited to the PARTICIPANTS who demonstrated a good faith effort to contribute data.