Enhancement of the functions of the Japan Atomic Energy Agency Library's Fukushima Nuclear Accident Archive using a novel data flagging system that improves the utilization of numerical data on the Internet

The Possibility of Numerical Data



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Background

- Tokyo Electric Power Company (TEPCO) Fukushima Daiichi Nuclear Power Station accident ("Fukushima Accident") oc curred on March 11th, 2011.
- Since then, the Japanese government, research institution s, TEPCO, etc. disseminate a variety of information.
- We discussed a case of "Internet information can be Grey Literature" as a new type of grey literature in 15th International Conference on Grey Literature (GL15)

Grey Literature

Records/Documents (report, press release), Photos/Movies, Numerical data (radiation monitoring, plant parameters) etc.

Collection of Fukushima Accident Information

• We started to provide reference Information related to the Fukushima Ac cident in April, 2011



-The R&D results related to Fukushima Accident by JAEA staffs

- Bibliographies related to the TMI-2, Chernobylsk-4 reactor accidents, environmental decontamination etc.

- Internet sources related to the Fukushima Accident

- We cover conventional literature for International Nuclear Information System(INIS) Database as much as possible
- Many information are published via the Internet but they are difficult to be covered
- In 2013, we started to collect, organize and disseminate such information
- "Fukushima Nuclear Accident Archive" was launched on June 23th, 2014

Outline of Fukushima Nuclear Accident Archive

- OAI-PMH (Open Archives Initiative Protocol for Metadata Harvesting) v2.0
- Dublin Core Metadata Element Set (DCMES/Simple DC) (ISO metadata standard)
- More than 50,000 metadata of the Internet information and Oral Presentation Information related to the Fukushima Accident



Fukushima Nuclear Accident Archive

JAEA	Fukushima Nuclea	r Accident Archive			
Go Go Home	kushima Nuclear Accident Archive >	mation and the oral presentation information about the accident	<u>English</u> 日本語	RSS RSS RSS	
DWSE Communities & Collections Issue Date Author Title	You can browse and search Internet-based information and the oral presentation information about the accident at the Fukushima Daiichi Nuclear Power Station of Tokyo Electric Power Company, Incorporated (TEPCO). Concerning Internet based information, URI will access to the WARP (Web Archiving Project) of the National Diet Library. [Data of The Society for Remediation of Radioactive Contamination in Environment] Collection data of the Society for Remediation of Radioactive Contamination in Environment are of the proceedings of the Society, which got no peer review and is available in Japanese. The English information of the proceedings was provided by Intellectual Resources Department, JAEA.				
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Numerical Data

- In many cases, Internet information contains valuable nu merical data, such as observed data, compiled data, eval uated data, experimental data, statistical data, theoretica I data etc.
- In the field of nuclear science and technology, for exampl e, useful numerical data is radiation monitoring data; pla nt parameters; physical quantities such as densities, mel ting points, cross sections, spectral shifts; statistical and p robability data; or numbers of occurrences of certain eve nts such as failures of pieces of equipment etc.

Numerical Data

Issue

Numerical data on the Internet has three issues:

(1) Difficult to be identified the existence

(2) Structural aspect such as various data type (a)PDF, JPEG, WORD, EXCEL, etc., (b)figure, graph, table, etc, and (c) raw data or processing data

(3) Validity and reliability evaluations of numerical data acquisition



Data Flagging in INIS

- To make a search for Internet information containing num erical data easier, we considered such method as to identi fy numerical data and attempted to introduce "data flaggi ng" system, which is used in the International Atomic Ener gy Agency's International Nuclear Information System (INI S).
- In INIS "data flagging", appropriate descriptors are assigne d corresponding to the kind of the numerical data in conjunction with a tag for Data Flagging. This assigned information helps to identify numerical data.

Data Flagging — Keyword

• We have chosen the following keywords for "Data Flagging". Table of contents of *Plant Data of Fukushima Daiichi NPS at the time of the Tohoku -Chihou-Taiheiyou-Oki Earthquake*, Fukushima Nuclear Accident Archive, INIS Thesaurus and INSPEC

urus are used as reference.





Thaca **Plant Parameters** -Water level -Pressure -Temperature -Radioactivity Density -Water injection into the reactor **Monitoring Data** -Air / Air (FDNPP) -Soil / Soil (FDNPP) -Seawater / Seawater (FDNPP) -Groundwater of Buildings (FDNPP) -Water Leakage Tanks (FDNPP) -Agricultural products -Fisheries products -Livestock products -Personal exposure dose, etc.

Data Flagging in Fukushima Archive

- We put the following information as "data flagging"
 - Put "numerical data" as tag in Type field which indicates th e record contains numerical data
 - Add keywords in Subject.chapter field which indicates the kind of the numerical data included

Element	Value (ex)		
Identifier.uri	http://warp.ndl.go.jp/info:ndljp/pid/3531775/www.nisa.meti.g o.jp/english/files/en20110503-2-4.pdf		
Title	Fukushima Dai-ichi Monitoring Data 2011-05-03 17:00		
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Issues to make use of Numerical Data

- For good creating metadata, we will add to multipl e date or time, observed or collected place of data, and distinction of raw data or processing data, etc.
- To increase the convenience of the numerical data, there is a need for conversion to CSV or Text forma t from PDF, Image file, graph
- No criterion for judgment to evaluate the validity a nd reliability of the numeric data

From Japan to the world



Thank you very much