

Contribution to the improvement of dissemination of grey literature

-JAEA Library's efforts for collecting, organizing and disseminating information on the nuclear accident -

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Background

- Tokyo Electric Power Company (TEPCO) Fukushima Daiichi Nuclear Power Station accident (“3.11 accident”) occurred in March 11th, 2011.
- Since then, the Japanese government, research institutions, TEPCO, etc. disseminate a variety of information, such as...

- literature information: books, papers,

- oral presentation, conference proceedings technical reports

- Not always published as literature in print and electronic formats
- Only participants of the meetings could share information

- various kind of information via the internet:

- records/documents (report, press release),
photos/movies, raw data (radiation monitoring,
plant parameters) etc.

→ *Grey Literature*



About the JAEA Library

Feature at JAEA library

- One of the largest nuclear information centre in Japan
- To collect and provide information in the fields of nuclear science from all over the world
- To publish JAEA Reports originated from JAEA's R&D results and distribute them widely
- INIS (International Nuclear Information System)
National Centre for Japan
 - Provide input data of literature about 3.11 accident
- To provide various kind of reference information about 3.11 accident on internet

Special website on 3.11 accident reference information

JAEA Library Website



JAEA Library

Search

<http://jolisfukyu.tokai-sc.jaea.go.jp/ird/english/index.html>

Journal articles and JAEA reports born to JAEA-OPAC Database Nuclear Power Station (JAEA-OPAC)							JAEA Report
Author	Title	Year	Journal Title	Volume	Page	URL	JAEA Report
Tajima, Shiro et al.	Descriptive text on scenario with seismic source catalog and high pressure water jet decontamination technology	2017	Journal of Nuclear Energy, Part C: Plasma Physics and Fusion Technology	10	1-10	https://doi.org/10.1016/j.jnucengc.2017.03.001	JAEA-OPAC Database Nuclear Power Station
Sato, Shiro et al.	Best estimate of the nuclear emergency probabilities and responses to avoid the accident of the Fukushima Daiichi Nuclear Power Plant	2017	JAEA Review 2015	13	96	https://doi.org/10.1016/j.jnucengc.2017.03.001	JAEA-OPAC Database Nuclear Power Station
Okamoto, Shiro et al.	Re-evaluation of the spent fuel in the light of the Fukushima Daiichi Nuclear Power Plant accident	2017	Environmental Monitoring and Assessment	189	1031-1043	https://doi.org/10.1016/j.jnucengc.2017.03.001	JAEA-OPAC Database Nuclear Power Station
Watanabe, Shiro et al.	Review of low level contamination countermeasures for Fukushima Daiichi Nuclear Power Plant accident. Focusing on decontamination	2017	Nuclear Engineering and Technology	49	1173-1177	https://doi.org/10.1016/j.jnucengc.2017.03.001	JAEA-OPAC Database Nuclear Power Station
Watanabe, Shiro et al.	Effect of emergency risk rates on properties of Fukushima Daiichi Nuclear Power Plant	2017	Journal of Nuclear Science and Technology	54	101-110	https://doi.org/10.1016/j.jnucengc.2017.03.001	JAEA-OPAC Database Nuclear Power Station
Sato, Shiro et al.	Adaptive risk reduction technology. Current conditions and the future prospects	2018	Journal of Nuclear Energy, Part C: Plasma Physics and Fusion Technology	11	229-230	https://doi.org/10.1016/j.jnucengc.2017.03.001	JAEA-OPAC Database Nuclear Power Station
Okamoto, Shiro et al.	Temporal change in conditions of radioactive contamination in Fukushima Daiichi Nuclear Power Plant	2018	Journal of Nuclear Energy, Part C: Plasma Physics and Fusion Technology	11	231-232	https://doi.org/10.1016/j.jnucengc.2017.03.001	JAEA-OPAC Database Nuclear Power Station
Sato, Shiro et al.	137Cs concentration in seawater near Fukushima Daiichi and after the accident at the Fukushima Daiichi Nuclear Power Plant	2018	Progress in Nuclear Energy	100	103811	https://doi.org/10.1016/j.jnucengc.2017.03.001	JAEA-OPAC Database Nuclear Power Station

Useful bibliographies related to the Fukushima Daiichi nuclear power station accident [J. J. Caron]

- Causes and simulations of accidents
 - On Fukushima Daiichi nuclear power station accident
 - On the Three Mile Island (TMI) Nuclear Power Plant Accident
 - Loss of coolant accident (LOCA)
 - On the Chernobyl accident
 - On the Fukushima Daiichi nuclear power station accident
 - Bivalve nuclear power plant/closure of the plant's off-site power supply
 - On the Fukushima Daiichi nuclear power station accident
- Effects caused by accidents
 - Quantitative economic calculation / estimation
 - On low-dose radiation exposure
 - On long-term damage and decontamination
 - On radioactive migration to domestic animals
 - On environmental and biological effects of strontium 90
- Countermeasures for accidents
 - On safety measures of nuclear reactors (NCR)
 - On defueling of damaged reactor core
 - On decommissioning of nuclear facilities
 - On emergency plans of nuclear accidents
 - On earthquake resistance of nuclear power plants
 - On Liquid Wastes Treatment
 - On radiation resistant equipment

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Intellectual Resources Department
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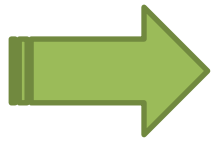
List of the R&D results related to 3.11 accident by JAEA staffs (JAEA Reports 18, journal articles 154, oral presentations 656)

Bibliographies related to the TMI-2, Chernobylsk-4 reactor accidents, environmental decontamination and others (18 theme, 15,969 articles)

Internet sources related
to 3.11 accident (30
fields, 2,601 URLs)

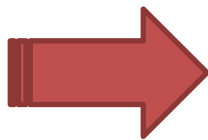
Issues on archiving grey literature

- Web information
 - Broken link, Deletion of homepage etc.
- Oral presentation information
 - Difficult to access



- Permanent accessibility
- Lack of bibliographical control

Some of them have been inaccessible! Disappearing!



- Metadata, classification and archive
 - Enable easy access to information

Need to archive 3.11 accident information!

Cooperation with National Diet Library

- Use of Archived Web information (WARP) to **ensure permanent access to Web information**
- WARP is the National Diet Library's Web Archiving Project to archive Japanese official institutions' websites: the government, the Diet, the courts, local governments, independent administrative organizations etc.



<http://warp.da.ndl.go.jp/>

Metadata for Web information

Element	Value (ex)
identifier.uri	http://warp.ndl.go.jp/info:ndljp/pid/6019786/ www.tepco.co.jp/en/nu/fukushima-np/images/ handouts_121227_02-e.pdf
title	Nuclide Analysis Results of Fish and Shellfish (The Ocean Area Within 20km Radius of Fukushima Daiichi NPS)
format.extent	4p.
format.medium	application/pdf
Type	
date.issued	2012-12-27
language	eng
creator	TEPCO
subject.chapter	
subject.title	
source.identifier	http://warp.ndl.go.jp/info:ndljp/pid/6019786/ www.tepco.co.jp/en/nu/fukushima-np/handouts/2012/index- e.html
source.title	Handouts at press conference 2012

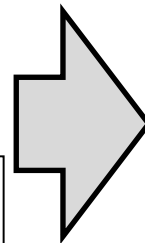
Classification system

- Use of the table contents of accident investigation reports, IAEA Nuclear Accidents Knowledge Taxonomy as reference

Final Report	
(Reports)	
■ Report	
Final Report	
Summary of Final Report	
Main Text	
Table of contents	
I. Introduction	
1. Overview of the Investigation Committee	
2. Activities of the Investigation Committee	
3. The Relationship between the Final Report and Interim Report	
II. The Damage and Accident Responses at the Fukushima Dai-ichi NPS and the Fukushima Dai-ni NPS	
1. The Damage at the Major Systems and Facilities of Units 1 to 3 of the Fukushima Dai-ichi NPS	
2. Examination of the Damage	
3. Response to the Damage	
4. Restoration of the Major Systems and Facilities	
5. Response to the Restoration	
III. Emergency Response	
1. Emergency Response	
2. Basic Plan	
3. Government Response	
4. TEPCO Response	
5. Response to the Emergency	

1-A LEGAL & GOVERNING FRAMEWORK
1-A-1 LEGISLATION & REGULATION
1-A-1-1 Conventions
Synonyms & related terms: Constitution
1-A-1-2 Laws
Synonyms & related terms: Regulation, decrees
1-A-1-3 Requirements & guides
Synonyms & related terms: Guideline
1-A-1-4 Nuclear Liability
1-A-2 GOVERNMENT & REGULATOR IN EMERGENCY
1-A-2-1 National & regulatory emergency centers
Synonyms & related terms: National – Regional, local
Emergency center – Emergency center, response center
1-A-2-2 Interference & communications in emergency
1-A-2-2-1 Government & regulator
1-A-2-2-2 Operating organization (Utility)
Synonyms & related terms: Operator, Power Plant, NPP
1-A-2-2-3 Technical support organizations
Synonyms & related terms: TSO, technical support institutions
1-A-2-2-4 Stakeholder involvement
Synonyms & related terms: (Public & mass media) communication, informing

(IAEA Taxonomy)



1. General views
1.0 general
1.1 in emergency term
1.2 in long term
2. Safety regulations and guidelines
2.0 general
2.1 in emergency term
2.1.0 General
2.1.1 defense-in-depth/safety culture
2.1.2 safety regulations
2.1.3 safety guidelines
2.2 in long term
3. Earthquake and tsunami

(original classification system)

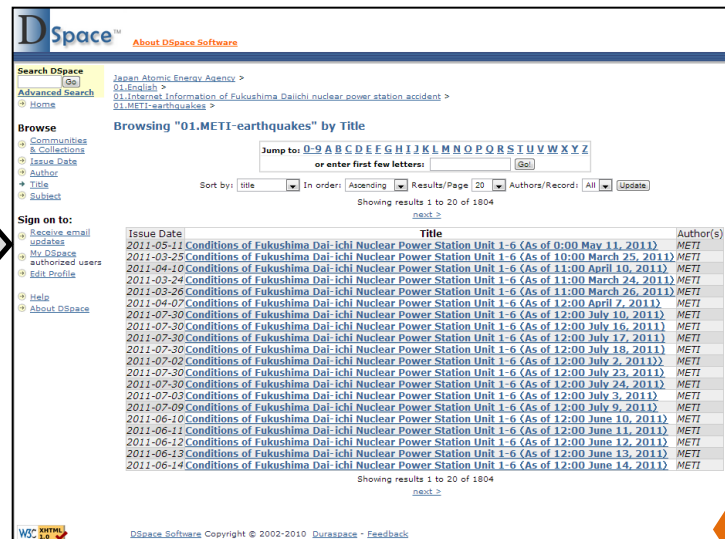
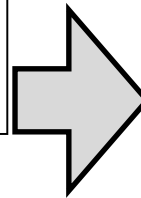
Oral presentation information

- Not always organized and reserved
 - Information on cutting-edge and valuable related 3.11 accident
- Created about 2,000 metadata of oral presentation at the 5 meetings,
ex. annual meeting of the Atomic Energy Society of Japan
- Use of metadata of web information(Dublin Core Metadata Element Set)

Element	Value (ex)
identifier.uri	http://library-documents.jaea.go.jp/opac/br_search_detail.asp?id=589152&syubetsu=1
title	Risk communication practice after the Fukushima nuclear accident
creator	Ayame, Junko(Japan Atomic Energy Agency); Sugiyama, Kenji(Japan Atomic Energy Agency); ...
source.identifier	http://www.aesj.or.jp/meeting/index-e.html
source.title	General Issues, 2013 Fall Meeting of the Atomic Energy Society of Japan,3-5 September 2013. Hachinohe Inst. of Technology, Aomori

3.11 accident Archives prototype system

- DSpace (open source repository software package)
- OAI-PMH (Open Archives Initiative Protocol for Metadata Harvesting) v2.0
- Dublin Core Metadata Element Set (DCMES/Simple DC) (ISO metadata standard)
- more than 36,000 metadata of the websites information concerning 3.11 accident of TEPCO and Ministry of Economy, Trade and Industry (METI) of Japan



permanent accessibility

(METI&TEPCO)

Plant parameters,
Technological measures,
Radiation monitoring
etc.

Conclusions

We contributed to the improvement of the dissemination of grey literature

- To cooperate with the National Diet Library's WARP for reserved permanent access to Web information
- To develop metadata schema and classification system for 3.11 accident Web information and oral presentation information
- To developed prototype system using DSpace, compile about 36,000 items

Future

- To collect web information about 3.11 accident from all over the world
- Provide metadata for
 - Great East Japan Earthquake Archive “HINAGIKU”
National Diet Library
<http://kn.ndl.go.jp/?language=en>
 - INIS Database/INIS Collection Search
International Atomic Energy Agency
ex. Input data for INIS Database
<http://inis.iaea.org/search/>
- To develop 3.11 accident archive successfully, it is essential to cooperate with the related organizations