

Summary of the 1st Technical Advisory Committee (TAC) Meeting

1. Date: Oct. 27 (Mon), 2014 — Oct. 31 (Fri), 2014
2. Place: Central Research Institute of Electric Power Industry (CRIEPI)
3. Participants: TAC; Mr. Stetkar (Chair), Mr. Afzali (Member), Dr. Chokshi (Member)

Prof. Takada (Member, Partially attended),
Prof. Yamaguchi (Member, Partially attended)
CRIEPI; experts of Nuclear Risk Research Center,
Industry; experts of Shikoku EPCO, Tokyo EPCO, Kansai EPCO and
Mitsubishi Heavy Industry (MHI) for respective topics

4. Proceedings

The agenda of the 1st TAC meeting was developed by Dr. Apostolakis, the Head of NRRC and Mr. Stetkar, the chair of TAC. Topics were selected based on the following three objectives.

- 1) To explore the current situation of Probabilistic Risk Assessment (PRA) as applied in Japan in order to support Japanese utilities' efforts to utilize PRA more intensively
- 2) To discuss the NRRC research plan and provide advice to NRRC
- 3) To discuss how to proceed with the key issues of NRRC R&D focused on the needs of electric utilities

Oct. 27 (Mon)

At the opening of the meeting, Mr. Stetkar stated his views regarding the guidance of TAC as follows.

- The formal statements of TAC will be developed by its six members including the chair.
- If there is a difference of opinion among members, a formal statement of TAC will require the agreement of four or more members. However, in that case, minority opinions may be included in the TAC report.
- TAC will submit a report of the discussion result to the head of NRRC. This report will be posted on the NRRC website, except when proprietary matters or matters relevant to security are discussed.

The basic rules of TAC including the above will be fixed at the next TAC meeting after hearing opinions from all TAC members.

Topic 1: Utility safety upgrade beyond Regulatory Requirements.

- The outline of the voluntary safety improvement by Japanese electric industry was presented by NRRC.

(Handouts)

Utility safety upgrades beyond Regulatory Requirements.

Topic 2: Level-1 internal event PRA models for Ikata Unit 3, Shikoku EPCO

- MHI presented the PRA model attached in the application documents for the conformity assessment of Ikata Unit 3, based on the new regulatory requirements.
- MHI explained that this PRA model does not include the equipment for “Accident Management” because the regulators require that the model be constructed with only the equipment described in the previous conformity assessment.

(Handouts)

Probabilistic Risk Assessment (PRA) for Unit 3, Ikata NPP / Level 1 Internal Event PRA during At-Power Operation and Shutdown

Oct.28 (Tue)

Topic 3: Level-1.5 internal event PRA models for Ikata Unit 3, Shikoku EPCO

- MHI presented the Level 1.5 internal event PRA models attached in the application documents for the conformity assessment of Ikata Unit 3, based on the new regulatory requirements.
- In addition to the above, the Level 1 and Level 2 PRA models that were used by Shikoku EPCO for the Periodic Safety Review (PSR) in 2002 were also presented as candidates for the foundation of the PRA improvement.

(Handouts)

Probabilistic Risk Assessment (PRA) for Unit 3, Ikata NPP / Level 1.5 Internal Event PRA during At-Power Operation

Ikata Unit 3 Level 1 PRA, At-Power with Accident Management

Ikata Unit 3 Level 1 PRA, Low Power and Shutdown with Accident Management

Ikata Unit 3 Level 2 PRA, Event Tree with Accident Management

Ikata Unit 3 Level 2 PRA, Table No. 4.2.6-3, Containment Event Tree Branching Probability

Topic 4: Plant Walkdown

- As the one of the key issues for NRRC R&D based on the electric utilities’ needs,

the current practices of “Plant Walkdown” in Tokyo EPCO, Kansai EPCO, and Shikoku EPCO were presented.

(Handouts)

None.

Topic 5: Human Reliability Analysis (HRA)

- Human Reliability Analysis (HRA) was selected as one of the key issues for NRRC R&D based on the electric utilities’ needs. The idea of developing a guideline for HRA was presented by NRRC.

(Handouts)

Research Plan of Develop HRA Procedure Guide

Oct. 29 (Wed)

Topic 6: Seismic and Tsunami PRA for Ikata Unit 3

- MHI presented the seismic PRA model and the tsunami PRA model used in the application documents for the conformity assessment of Ikata Unit 3, based on the new regulatory requirements.
- There were some questions and answers about the details. Due to the time constraints, the discussion will be continued in the January 2015 TAC meeting.

(Handouts)

Probabilistic Risk Assessment (PRA) for Unit 3, Ikata NPP / Level 1 Seismic and Tsunami PRA during At-Power Operation

Topic 7: External Event PRAs of Kashiwazaki-Kariwa

- Tokyo EPCO presented the seismic PRA model and the tsunami PRA model used in the application documents for the conformity assessment of Kashiwazaki-Kariwa Unit 7, based on the new regulatory requirements.

(Handouts)

External Event PRAs of Kashiwazaki-Kariwa NPS

Topic 8: NRRC’s PRA development plan for Ikata Unit 3

- NRRC presented the contents of the research project on Ikata Level 2 seismic PRA sponsored by METI (Ministry of Economy, Trade and Industry).

(Handouts)

NRRC's PRA Development Plan for Ikata Unit 3

Oct. 30 (Thr)

Topic 9: NRRC Research Plan 2014-2015

- NRRC presented the outline of its research plan and the contents of major research items.
- Additional details of the research plan and priorities will be discussed during the January 2015 TAC meeting.

(Handouts)

Road map & Working Plan (2014-2015) for Risk Assessment team in NRRC
Research Plan on Risk Assessment area (WG1) Offsite Effect
Research Plan (2015fy) of the Plant Thermal-hydraulics unit
Study on Risk Communication
Internal & Seismic-induced Fire and Flooding PRA
Research Plan on Natural External Event Assessment Area (NRRC-WG2)

Oct. 31 (Fri)

Topic 10: State of knowledge on Multi-Unit PRA

- NRRC presented the current knowledge on the multi-unit PRA.

(Handouts)

State of the Knowledge on Multi-Unit PRA / Floor and System/Components
Response