Approach of Nuclear Safety Oversight Office (2nd Quarter, 2014)

December 1, 2014
Nuclear Safety Oversight Office

NSOO - Project Performance

- 3 year business plan
  - On schedule
  - 95% completion of target milestones
- Recommendation close out
  - 40 recommendations
    - 》6 completed
    - 》30 in progress
    - 》4 not progressing
- Benchmarking
  - International workshops and conferences
  - External Review planned in Feb 2015

NSOO Advice

- Leadership
- Governance and control of safety
- Learning
- Emergency Preparedness
- 1F
  - Industrial safety
  - Nuclear safety
  - Radiation protection
- 2F
- KK

(1) Implementation of the 2nd quarter

➢ Approach of Nuclear Safety Oversight Office (NSOO)

The opinions of NSOO based on monitoring for the past few months are as follows.

A. Holistic View

A.1 Leadership

Since the division of nuclear into two businesses, NSOO has observed an increase in safety awareness amongst the senior leadership with much more interest, challenge, involvement and passion for safety.

The senior leadership have a healthy interest and make good challenges on safety. Their recent interest in excessive overtime working, despite the program pressures, is good. The creation of action plan demands for the executive has driven some safety improvements in the nuclear businesses.

In addition the President's Safety Steering Meeting is developing into a lively and effective forum for the nuclear executive to focus on the strategic safety issues. There is still a lot of work to do to maximize the effectiveness of the new nuclear business structure and NSOO expects the SSM to oversee this.

A.2 Governance and Control of Safety

The appointment of Heads of Safety Assurance at the senior level (reporting directly to the President and CDO) is strengthening safety within TEPCO. However, there is still a lot to do to properly define the posts, resource them and enable the post holders to drive the necessary improvements in safety.

As the new businesses have developed NSOO observes that the place where is to share information and to make a decision related to safety has not been clarified and been ambiguous. New committees and meetings have been created and there is a lack of clarity as to where decisions are taken and the role of each meeting. NSOO have advised that safety related decisions should be taken only in meetings properly constituted and managed for that purpose. In addition, NSOO believes that these discussions and the result should be compiles as the engineering review documentation and the process in which the final approval is received should be re-build.

CDO recognized these problems and started to consider improvement. NSOO will continue to monitor that that is the case.

NSOO has previously commented on the lack of Key Performance Indicators (KPI) in TEPCO. KPIs are now being developed by the two businesses. This is a positive move which will enable the leadership to better understand the safety performance and where safety needs to be improved.

TEPCO is short of resource and capability across many fields which inevitably could affect safety. NSOO has previously recommended that there should be an assessment of the safety related roles that TEPCO needs to maintain.

A.3 Learning

TEPCO has improved its capability to analyse non conformances (NC), events, accidents and safety information (OE) from outside the company. However, the final step of converting all the information and knowledge into learning which would improve our standards or prevent a recurrence of an accident is still weak. The Executive now understands this issue and will work through the SSM to analyse and improve learning.

A.4 Emergency Preparedness

The efforts to train in Command and Control of emergencies at KK are impressive and the site is now approaching world class standards in emergency management.

At 1F and 2F a lot of training is done in the field in dealing with such as water supplies and fire protection. However, insufficient site level training in Command and Control has taken place. The management have acknowledged this and are making plans for improvement despite their heavy schedule.

B. Site Specific Issues

B.1 Fukushima Daiichi

B.1.1 Industrial Safety Accidents

There have been several accidents at 1F over the last months. The direct causes of these events are different but there are similarities in the root causes. One common root cause is Work Control. An NSOO team has assessed the work control process by interviewing middle managers and observing prejob briefs and training. Work Control is adequately managed across a lot of the site although the work load is very high. However in some area the work control is fragmented and the system is severely stressed by the high workload and the number of new staff with little or no experience of working to nuclear standards. Also, the training for these contract supervisors which is specific to the work at 1F site is not adequate.

NSOO also observe that the demanding work schedule is a contributory factor in some cases and this has to be addressed at site and corporate so that we meet the schedule where possible, but only with the appropriate level of safety built in.

The 1F management is aware of these findings and has made similar observations themselves. The challenge is to improve the situation so that the demanding workload can be met without having more accidents. We see that the 1F station superintendent is making strong efforts to correct this situation and implement stronger work control.

B.1.2 Nuclear Safety at 1F

NSOO has previously commented on the lack of a proper safety framework for decisions and approval at 1F. The requirement for such a safety framework is now one of the 10 actions on the executive from the Board. However the framework has not yet been defined. In the meantime NSOO is concerned that work with important nuclear safety implications is not being assessed and approved at the correct level and NSOO has had to intervene in some cases.

The CDO and Site Superintendent are aware of our views but progress is slow.

The Site Superintendent has proposed that the nuclear safety aspects and the industrial safety aspects of projects should be separated. NSOO agrees and advises that the project should be responsible for the nuclear safety case and held accountable if it is inadequate. The approval route for nuclear safety cases should be reconsidered to make it more rigorous.

B.1.3 Radiation Protection

NSOO is impressed with recent improvements in the control of radiation exposure at 1F. The creation of procedures for assessing dose during work planning and for implementing ALARA during design, work planning and work control is commendable. The doses at 1F are inevitably high but radiation dose must be treated with caution and the current improvements give us expectation that the dose to the workforce will now steadily decrease.

B.2 Fukushima Daini

We see a workforce that is good but suffering from having no mission for their site. This has made it difficult for recent initiatives in safety culture improvement to penetrate the work force.

On the other hand, in our limited observation of Daini, we observed that there were some safety issues which needed to be improved but the group in charge were making effort for the improvement aggressively. We felt that their safety awareness level had been improved.

B.3 Kashiwazaki Kariwa

The NSOO KK team has focused on safety aspects of reactor start up such as the implementation of safety enhancement, maintenance of equipment during the prolonged shutdown and the readiness of staff for start up.

The senior leader's drive for improved safety standards and culture at KK is impressive as is the safety motivation of the new CNO in the Generating Business.

Although there is still a lot of work to do to complete the enhancements, issue the relevant procedures and train the staff how to use the procedures, these are conducted according to the plan and NSOO has not identified any safety related problems that would prevent restart of units 6 and 7 (assuming the NRA approve the enhancements).

NSOO will continue to monitor the readiness for start up.

- Self-Evaluation of NSOO

NSOO carries out a self-evaluation as follows on the installation and the activities of NSOO that were planned in Countermeasure 2 of the Nuclear Safety Reform Plan.

NSOO Project Performance - Overview

NSOO development is to program, our recommendations are being implemented and NSOO is making a positive difference to TEPCO nuclear safety.

Project Performance

NSOO's role is to assess nuclear safety to prevent accidents and enhance TEPCO safety performance to be world class. The business plan has 3 stages;

1. Procuring and training staff — May 2013 – Sept 2013
2. Regular advice to sites and the Board — Oct 2013 – Oct 2014
3. Refinement of NSOO to world class — Nov 2014 – Dec 2015

The first 2 stages are complete. NSOO is 95% to target against project milestones for setting up NSOO and reporting to the Board. NSOO staff are competent and trained using INPO and WANO courses, internal training and the help of overseas mentors. Regular assessments are carried out and reports made to site staff and the Board. The slight delay against reporting is because the program was diverted to monitor progress against the safety action plan for the Board and monitor work control at 1F.

Performance against KPIs

In the last year NSOO have made 40 recommendations to the site and business staff of which

6 have been completely implemented

30 are accepted and in progress

4 are not progressing

In addition NSOO has made a series of reports to the Board in which it has made several value and behaviour based recommendations. The Board has accepted and acted upon these recommendations. As well as enforcing their own safety value based behaviour, the Board has imposed 10 key recommendations from the plan on the nuclear executive. They are implementing the 10 actions.

The TEPCO NSOO has taken part in benchmarking and workshops with US and European oversight functions. Based on this and his own experience, the Head of NSOO judges this to be a credible performance in the first year of Oversight. NSOO is having a positive influence on the nuclear safety performance of TEPCO. For example, the leadership behaviour, the challenge in nuclear safety committees, and the mechanisms for controlling and reducing radiation doses to the workforce have all improved. TEPCO has also set up a panel of international nuclear safety experts and in the coming months they will review the NSOO performance and results to test this conclusion. The results of this evaluation will be reported to the Monitoring Committee.

- Approaches to address suggestions / proposals from Nuclear Safety Oversight Office
  - The executive officers implemented the following improvements:
    - Based on the proposals of the Nuclear Safety Oversight Office, the status of progress of the action plan ordered from the board of directors to the executive officers was reported in the board of directors meeting on August 27. The board of directors ordered again an evaluation of the implementation status of the action plan of the executive directors by the Nuclear Safety Oversight Office.
    - A ”Safety Steering Meeting” was held on July 18, and the management of change was discussed associated with the establishment of the Fukushima Daiichi D & D Engineering Company . It was evaluated that the effect of constructing a project system has increased for solving the issues in a cross organizational manner, etc. On the other hand, it was determined that an evaluation is necessary whether or not there is a new risk being generated

and whether or not nuclear safety is strengthened further due to the organizational change. Because the Safety Steering Meeting has the advantage of discussing one or two topics intensively with a small number of members in its management[1], it will be held every quarter.

- In Fukushima Daiichi, based on the items that were recommended by the Nuclear Safety Oversight Office, a system of reducing the exposure dose has been devised to make the ALARA that is the principle of the radiation protection concrete. From now on, the optimization of the technological measures, such as shielding and remote operation, will be incorporated in the construction plan in which a certain amount or more of the dose will be expected.

○ Based on "a change management guide" created from the proposal of the Nuclear Safety Oversight Office, the PDCA cycle for a large change of management has been used while creating the change management plan. It has currently been applied for the approach of the self-evaluation using the Traits and the PO&C. However, it is necessary to expand the approach that is applied from now on.

[1] There are 5 members in the Safety Steering Meeting, and they are the president (a chair of the meeting), the general manager of the Nuclear Power and Plant Sitting Division, the president of the Fukushima Daiichi D & D Engineering Company who also serves as the CDO, the Safety Management (an executive officer), and the head of the Nuclear Safety Oversight Office (an observer).

(2) Future plan

The Nuclear Safety Oversight Office will, based upon the instructions from the Board of Directors, evaluate the implementation status of the action plans directed by the Board of Directors to the executive officers and report the evaluation results sometime in October. In addition, the Nuclear Safety Oversight Office will continue oversight activities and suggestions /proposals for important activities in terms of nuclear safety.

The Board of Directors will, in consideration of the evaluation results of the implementation status of the action plans by the Nuclear Safety Oversight Office, give instructions for necessary measures to the Board of Directors and the executive officers. The executive officers will, taking into account the suggestions/proposals from the Nuclear Safety Oversight Office, accelerate the speed of the improvement in an effort to promote the Nuclear Safety Reform Plan steadily.