SARS Prevention (Notices to) Licensed Operators of Nuclear Power Plants in Taiwan

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I. Foreword

To ensure safe and stable operation of all nuclear power units under all circumstances, nuclear power plants (NPP) are equipped with sophisticated installations and control systems. To fully understand the capability of these hardwares and to bring a unit back to stable condition by manipulating related equipment when operating parameters are disturbed is an extremely specialized task. In Taiwan, the person who carries out this task must hold an operator's license, which is issued by the Atomic Energy Council (AEC). This type of personnel is normally called Licensed Operators (LOs).

Due to the nature of its expertise, and in consideration of the importance of its work on safety, training of an NPP licensed operator is a very serious and time-consuming process. Generally speaking, the process -- from the initial training, regulation lessons, simulator operation, internal tests, to the final passing of the licensing examination held by AEC -- takes more than 3 years. Therefore, an operator is not easy to train and difficult to replace. Besides, an outstanding operating team is an important corner stone for secure operation of an NPP. If the first line operating team is unavailable for duty, it is going to create grave impact on nuclear safety immediately. Thus, ever since the outbreak of SARS in Taiwan, AEC has been paying close attention and ready to take necessary measures to prevent the LOs from infected with SARS.

II. Current Status of NPP Operating Manpower

Qualified LOs serve as an important link in nuclear safety. Whether the plant is in operation or during shutdown, it needs to be monitored 24 hours nonstop by LOs. Presently, the NPPs are operated by three shifts of LOs, and

each shift works eight hours. To avoid overloading which might compromise safety, there must be at least four shifts of manpower available. If the number of the LOs is less than four shifts, the NPP has to be shut down, according to NPP technical specifications.

On account of the workload and on-going retraining, all three NPPs in Taiwan maintain six shifts of LOs. Of these, four shifts are scheduled for control room duty, one shift is going for retraining and the other is on standby. The current personnel status, therefore, meets nuclear safety requirements, both quality- and quantity-wise.

III. NPP SARS Prevention Procedures Required by AEC

In view of heavier demand of SARS prevention since late April, to avoid its effect on nuclear safety, AEC issued a memo on April 24, requesting every NPP to reinforce its SARS prevention procedures, and to include SARS notifications into the current incident reporting system（see Attachment 1）. On May 6, AEC issued another memo（see Attachment 2）requesting every NPP to carry out the following exercises:

1. Every NPP is to set up a “SARS Epidemic Prevention Task Force” and to establish a SARS situation reporting system.
2. All main control rooms must be sterilized every day.
3. All on-duty LOs must wear masks and have body temperature taken at both check-in and check-out and recorded in a log, which is to be kept inside the main control room. All other personnel entering the main control room must have body temperature taken with record kept in the log.
4. All personnel entering the main control room must wear masks.
5. Every NPP must have a contingency plan in case when quarantine of an LO scheduled for duty is required.

To ensure that all NPPs effectively carry out the above-mentioned procedures AEC, through its resident inspector, inspected the implementation of SARS prevention at all NPPs on May 8. Results of this inspection are as follows:

1. Every NPP has set up a “SARS Epidemic Prevention Task Force” and has reported /will continue to report upon discovery of any worker with abnormal body temperature.
2. The main control room of every NPP has been cleaned and sterilized every day.
3. All operators wear mask while on duty, have had body temperature taken and recorded in a log in the main control room. Other staffs entering the main control room also have body temperature taken and recorded.
4. All personnel entering the main control room wear masks.
5. All NPPs have contingency plans to deal with situation when an operator is to be quarantined.

Overall speaking, all procedures have been carried out effectively. More stringent have also been self-imposed, such as personnel of the same shift not riding the same commuter bus to work or back home and personnel of different shifts keeping proper distance from one another during turnover briefing. These are positive measures toward epidemic prevention and control.

IV. Current Situation of Every NPP

As of May 20, each of the three operating NPPs has one case of quarantine – Chinshan and Kausheng are of non-licensed personnel; Maanshan is of an LO. The two personnel from Chinshan and Kausheng were quarantined because their house maids taking care of hospitalized family members developed fever. Quarantine for the Chinshan and Kausheng

personnel ended on May 18 and May 19, respectively, and both are doing fine currently. As for the Maanshan plant, Mr. Chen was admitted to Kaohsiung Medical University Hospital for treatment of fever on April 28. Initial diagnosis was influenza Type-A, from which he recovered and was discharged on May 5. He was quarantined at home for two weeks since and his family members had been quarantined from April 30 to May 7. However, on May 13, he was reported to have positive reaction to CDC's test, which thus listed Mr. Chen as a probable SARS case. Mr. Chen has been monitoring his body temperature every day and is now in good health condition-- no fever, no coughing, etc. As instructed by Pingtong Health Department, he is still being quarantined at home.

V. Conclusion

Tasks of a NPP operation require highly qualified expertise, and can be carried out only by well-trained people. It takes long time to train these personnel and they are difficult to replace. Any problem inflicted by SARS may directly affect nuclear safety. On account of this, AEC will continue to look out for this problem, and be ready to assist all NPPs with guidance for advance prevention and contingency plans.