**WANO-MC on-site representative weekly report**

**Tianwan NPP**

**March 20th, 2014**

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| **Items** | **Description** | **Note** |
| **Plant status** | * Unit(s) status (in operation (power), refueling outage, shut down, etc.)

Unit 1 - operating at rated power Unit 2 - operating at rated power |  |
| **Events during the week** | * Reported events

None* Events, which should be investigated by the plant

Unit 1 – Turbine BuildingMarch 18th, 2014 at 12:34***Description***:A minor hydrogen explosion inside the junction box on the Generator Hydrogen Dryer (GHD) caused the ejection of PLC screen. The explosion was triggered when a field operator switched off the magnetic pump (ventilator) in the GHD. The incident resulted in the facial injury of a field operator.***Event sequence***:* Hydrogen leakage was detected in the running GHR and a command was given to isolate the GHR from the generator hydrogen cooling system.
* To isolate the dryer the running magnetic pump (ventilator) must be switched off. A field operator stopped the magnetic pump which is controlled from the local PLC panel.
* The hydrogen accumulated in the wiring junction box was ignited when the pump was stopped. The LED PLC screen was blasted out and cracked.

***Cause:**** 1. The hydrogen mainly leaked through an orifice and I&C wire bushing-hose that leads to the junction box which is located behind a LED control screen. The I&C wiring for level switch on the drainage tank was abandoned a long time ago after a technical modification, but the wire and hole were left untouched.
	2. Hydrogen leaked, fled by the bushing and accumulated in the inner space of the junction box which is behind the PLC screen panel.
	3. Possibly electric arc was generated when the operator cut off the running pump. Then an explosion was triggered.

***Lessons learned:***1. Protection glasses should be available when any explosion, high temperature and high pressure hazardous work is conducted.
2. The abandoned elements and their penetrations in the equipment after modifications should be handled carefully without leaving latent future deficiencies.
3. The period and scope of maintenance of equipment that contacts and contains dangerous working medium such as explosive gases, toxins, highly corrosive stuffs and so on, should be determined not only on the basis of design and the manufacturers’ requirements but also the operation experiences.
4. The oil (the generator shaft sealing oil) carried by circulating hydrogen flow contaminates the desiccant in the GHD’s heating towers and makes it unavailable to absorb moisture. The overheated failed desiccant releases powders which can be removed by H2 to other parts of the dryer such as drainage tank, thus causing the tightness violation of the drainage valves.
* Other events of interest

None | ***Important******and*** ***for preliminary information only.*** |
| **OSR monitoring activities during the week** | * Targeted observations (gap focus area, related plant department(s)/counterparts, dates, main results)
1. Station Condition Report routine meetings
2. Discussion on the hydrogen explosion event.
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| * Participation in plant self-assessment/review/inspections (review area, related plant department(s)/counterparts, dates, main results)
 | None |
| * Other Internal and external review (who conducted, review area, related plant department(s)/counterparts, dates, main results)

From March 17~19, 2014 the NNSA (National Nuclear Safety Administration) representatives reviewed the refueling outage preparation status for unit 2. The review consisted of document check and field walk-downs. The station departments of Nuclear Safety, Maintenance, Production Planning, I&C and Physics and Health (Radiation Protection and Industrial Safety) took part in the review. |  |
| **OSR plant support activities during the week** | * For each activity – type of activity, gap focus area or reason, related plant department(s)/counterparts, dates, main results

Gathering OE reports on hydrogen explosions from MC OE program and disseminate the received materials to the related departments. |  |
| **Other WANO activities during the week** | * For each activity – type of activity, reason, related plant department(s)/counterparts, dates, main results
 | None |
| **Planned activities** **for the next week** | * OSR monitoring activities
1. Condition Report meetings
2. Pre-visit of WANO MC
* OSR plant support activities
* Other WANO activities

From March 29, 2014 the pre-visit team will be working at the station.* Other plant activities of interest
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| **Other issues** |  |  |

**Еженедельный доклад представителя ВАО АЭС-МЦ**

**на площадке \_\_\_\_\_\_\_\_\_ АЭС**

**даты месяц 2014**

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| **вопросы** | **описание** | **примечание** |
| **Состояние станции** | * Состояние блока(ов) (на мощности, в ремонте, заглушены, и т.д.)
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| **События за неделю** | * Учетные события
* Станционные события
* Другие события, представляющие интерес
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| **Деятельность представителя по мониторингу за прошедшую неделю** | * Целевые наблюдения (проблемная область, подразделение(я)/персонал АЭС, даты, основные результаты)
* Участие в станционных самооценках/проверках/ инспекциях (область проверки, подразделение(я)/ персонал АЭС, даты, основные результаты)
* Другие внутренние и внешние проверки (кто проверял, область проверки, подразделение(я)/персонал АЭС, даты, основные результаты)
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| **Деятельность представителя по организации поддержки АЭС за прошедшую неделю** | * Для каждого мероприятия – вид мероприятия, проблемная область или причина проведения, подразделение(я)/персонал АЭС, даты, основные результаты
 |  |
| **Другие мероприятия ВАО АЭС за прошедшую неделю** | * Для каждого мероприятия – вид мероприятия, причина проведения, подразделение(я)/персонал АЭС, даты, основные результаты
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| **Планируемые мероприятия на следующую неделю** | * Деятельность представителя по мониторингу
* Деятельность представителя по организации поддержки АЭС
* Другие мероприятия ВАО АЭС
* Другие мероприятия на АЭС, представляющие интерес
 |  |
| **Разное** |  |  |