

## Questionnaire Rebecca HARMS

To begin with, I would like to ask a number of questions concerning the starting point of the incidents, the transformers:

1. What was the precise origin of the short-circuit of transformer AT01 in Krümmel on 28 June 2007?
2. What was the precise origin of the short-circuit in the auto-supply transformer during the incident at the Ringhals NPP on 14 November 2006?
3. What is known so far about the precise origin of the short-circuit at transformer AT02 in Krümmel on 4 July 2009?
4. What kinds of assessments of the state of the high voltage transformers have been carried out in the Vattenfall NPPs in Germany since November 2006?
5. What kinds of assessments on aging have been carried out so far on the high-voltage transformers and what are the results?
6. What types of damage can be identified with the respective assessment methods?
7. Did Vattenfall or the safety authority envisage the replacement of the high-voltage transformers?
  - a) If no, why not?
  - b) If yes, why was it not implemented?
8. Which surveillance measures and which recurring examinations are planned for the high-voltage transformers and which have already been implemented?
9. Can you confirm reports that the safety authority had ordered specific surveillance measures for the high-voltage transformers, confirmed by the operator, but that were not active on 4 July 2009? If yes, why were they not operational?
10. Did you carry out studies on the design basis of the transformers in the framework of the 2006 uprating of the Krümmel NPP? If yes, when and with what conclusions?

Shortly after the incident on 4 July 2009 increased radioactivity in the primary cooling circuit has been reported. The cause was indicated as damaged fuel pins. In this context I have the following questions:

1. When and how increased radioactivity was identified?
2. How and at what location the fuel pins were or are examined?
3. How many fuel pins were so far identified as damaged and what kind of damage was identified?

4. Have metallic chips been clearly identified as sole origin of the fuel damage or is it possible that other causes (e.g. pressure fluctuations during the reactor scram) contributed to the damage?
5. When and how have the metallic chips been discovered?
6. In what locations in the cooling circuit and the pressure vessel the metallic chips have been identified so far?
7. Were metallic chips also found in the control rod guide tubes?
8. Has the origin of the metallic chips been confirmed?
9. Is there any connection between the metallic chips and the repair of cracks in various parts?

The incident of 4 July 2009 raises again questions on the reliability of the operator and Vattenfall as a whole:

1. What significance – beyond a symbolic one – Vattenfall attributes to the replacement of staff in management positions?
2. What are the Vattenfall selection criteria for these individuals in leading positions?
3. How does Vattenfall explain the operator errors on the technical level during the incidents at Brunsbüttel (14 December 2001) and Krümmel (28 June 2007), as well as the event that triggered a reporting obligation (meldepflichtiges Ereignis) in Krümmel (1 July 2009), and on the communication level in Krümmel (28 June 2007 und 4 July 2009)?
4. How is the exchange of experience organized between the operators of the NPPs that are operated in Europe under Vattenfall responsibility?
5. How does Vattenfall value contracts that explicitly contain the intention of irreversibility ("Both sides contribute their share so that the content of this agreement will be enduringly implemented"<sup>1</sup>)?

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<sup>1</sup> „Beide Seiten werden ihren Teil dazu beitragen, dass der Inhalt dieser Vereinbarung dauerhaft umgesetzt wird.“

Concerning technical safety and organisational provisions in the operation of NPP Krümmel I have the following questions:

1. To what extent Vattenfall has introduced self-learning safety management in the NPPs in Germany and what status does it have?
2. What are the differences in safety management between the Swedish and German Vattenfall facilities?
3. What is the design of the aging management for the German Vattenfall NPPs?
4. Which requests by the Reactor Safety Commission (RSK) on aging management have not been implemented in the Vattenfall facilities yet?
5. Which studies have been carried out by Vattenfall on the relevance of the incidents in Ringhals in December 2008 and in March 2009 for the reactors in Germany, which have been rated their on the highest level of safety relevance?
6. Which provisions against the crash of a large airliner has Vattenfall implemented after the 11 September 2001 and what safety case has been made since?
7. Are there currently provisions against airplane crash in the course of a licensing or authorisation procedure?
8. What role plays co-owner E.ON in all of the events around the Swedish and German NPPs?

Questions concerning a targeted airplane crash

1. What is the basis for the provisions to mitigate the effects of a targeted airplane crash that you mentioned during our discussion?
2. Were these provisions defined in accordance with the safety authority and did the authorities grant explicit agreement?
3. What is the current state of the installation of an artificial fog screen at the Krümmel site?
4. What is an estimate for the reduction of the hitting probability through the fog screen relative to the possibly non-manageable events indicated in the GRS study (commissioned by BMU)?

Questions regarding the nuclear waste management

1. How many of the spent fuel elements (in number and tons) send to the UK and France for reprocessing have already been reprocessed?
2. In which reactors the separated plutonium has been reintroduced and what is the quantity of plutonium that has still to be reused?
3. How has the so far reprocessed uranium been used or where is it currently stored?

4. What quantities of low and medium level waste from Krümmel have been conditioned according to the preliminary final disposal specifications for Schacht Konrad?
5. What measures have been taken to identify the substances in Krümmel waste that are covered by the liquid discharge limits of the Konrad license?