[redacted] (GROW)

From: [redacted] (GROW)
Sent: 29 April 2016 10:32
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Cc: [redacted] (GROW); [redacted] (GROW); [redacted] (GROW); [redacted] (GROW)
Subject: PAKS - Flash report - technical meeting of 28-04 with HU
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Importance: High

On Thursday, 28/04/2016 a **technical** meeting on the Paks case took place with the Hungarian delegation led by Mr Balázs Sonkodi, Secretary of State. The meeting was held in good atmosphere and spirit of cooperation. Discussion was purely technical, no conclusions were drawn.

See list of participants below.

Main points raised:

- HU gave a presentation to demonstrate that "VVER is the only technology choice that meets the HU requirements" to justify the sole provider argument and that a direct award was therefore possible.
- 5 main arguments were presented by HU to justify the choice of RU technology (VVER-1200 reactors)

1. Approximate unit size – the size of the reactors need to satisfy the capacity of the HU electricity transmission system. Too big reactors would require significant adaptations to the HU transmission system.
2. Hermetic Double wall containment around the reactors – important safety feature (in particular in case of passenger aircraft crash)
3. Existence of a core catcher – this is a device provided to catch the molten core material of a nuclear reactor in case of a nuclear meltdown and prevent it from escaping the containment building.
4. Lower possibility of human failures due to existing know-how, experience, licensing
5. Technical ability to deliver the project – construction and commissioning experience, risk reduction, turn-key risk allocation

The discussion mainly focussed on the first three points, the last two having already been discussed during the last meeting and considered as not real technical arguments.

- Argument 1. Unit size

  - HU wants to replace the existing energy capacity of Paks I (ca. 2000 Mw, so 1000 per reactor), not seriously enlarge it.
  - EPR and APR as reactor types are too big for HU, and would require significant adjustment of the HU transmission grid. This is to a certain extent true for RU technology as well, but since the reactor is smaller, the necessary adjustment would be much smaller
  - Only two Pressurised Water Reactors (PWR) would nevertheless meet the capacity replacement of HU (VVER and AP1000 [redacted]). The [redacted] EPR [redacted] with 1600 Mw would be too big.

- Argument 2. Hermetic Double wall containment

    - Not all solution offered on the market can meet this HU requirement which is seen as an important safety feature and seems to be a minimum requirement of the HU safety regulation.
    - According to the HU experts, only VVER and EPR reactor could meet this requirement. But since the EPR reactor would be too big (see argument 1), they could not be taken into consideration. Whether [redacted] meets this was left unclear.

- Argument 3. Existence of a core catcher

    - both VVER and EPR has this, but they have different design, the other providers have different solutions, which might be technically equivalent, but for HU this is a requirement under their nuclear safety code.

Follow up:

- We agreed with HU that they would send a more elaborated written contribution by 9 May 2016 on the first 3 arguments, identifying the possibilities offered by the other technologies and indicating the clear requirements and obligations under the HU nuclear safety code.

Overall summary:

- Arguments 1-3 are presented as being new technical arguments (only part of Argument 1 had been made previously) and when applied cumulatively are presented by HU as leading to VVER being the only technology choice.
- Arguments 4-5 repeated the previous arguments, which COM considers mainly commercial and which could have been taken into account as criteria in a tendering procedure.

We agreed with ENER and JRC to assess the validity of Arguments 1-3 on the basis of the written contribution.

Many thanks to [redacted] for report.

Participants:

HU

- *Mr Balázs Sonkodi, Secretary of State*
- [redacted], *Prime Minister's Office*
- *Mr István Hamvas - CEO of Paks I*
- [redacted] *Paks II*
- [redacted] *Nuclear Department, Paks II*
- [redacted]
- [redacted] *HU Perm Rep*

DG GROW

- [redacted] *G.2*
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DG ENER

- [redacted] *Directorate D - Nuclear energy, safety and ITER*

JRC (Joint Research Center)

- *Ms* [redacted] *JRC, Unit A.4, Nuclear Safety and Security*
- *Mr* [redacted] *JRC, Unit F.5, Nuclear Reactor Safety Assessment*