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Limited

Opening remarks  
Standing Committee on Natural  
Resources (RNNR)

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## NRU Outage

### Slide 1

NRU shutdown automatically May 14 due to a loss of off-site power.

A decision was made not to restart due to evidence of a heavy water leak.

The small heavy water leak which was the cause of the shutdown continues at 4 to 5 Kg/hr.

All of the heavy water from the leak is being collected and stored in specially designed drums.

About 20% of the heavy water evaporates and results in a monitored airborne tritium release from the Chalk River Site.

**(Slide 1)**

As a result of the leak, tritium emissions are just above the specified action level at which AECL reports to the CNSC, to our local stakeholders, and posts to the AECL web site. However, these emissions are at approximately 1/1000<sup>th</sup> of the regulatory limit.

## **Slide 2**

The leak location was identified 4 days after shutdown using remote camera inspection, due to the extreme difficulty in accessing the location from the top of the reactor, 9 metres above.

The leak was caused by corrosion starting on the outside wall of the vessel at the base. Specifically, Nitric acid formed from radiation effects on the nitrogen in air and water at the base of the vessel.

## **Slide 3**

Full video inspection of the base of the reactor vessel indicates one other area similar to the leak location and half a dozen other areas of concern.

#### **Slide 4**

Preliminary assessment of extent of corrosion and available nuclear repair technologies confirms there is no immediate or simple solution. This judgement is reflected in our recent guidance of at least a 3 month outage.

Inspection and repair activities are complex due to limited access to the leak/corrosion location and by the surface conditions on the vessel walls.

We are currently removing the fuel from the reactor.

We will then drain the heavy water and do Non-destructive examination on the inside wall at the base of the vessel.

We will select the most appropriate cleaning and repair technique – all work must be done remotely due to access from 9 metres away at the top of the reactor and high radiation fields.

Only when we know the extent of repair and the technique, can we produce a detailed plan and schedule for the work.

In parallel with the repair and inspection, we will complete an assessment to confirm the vessel is fit for service.

We are keeping the CNSC inspectors directly involved at the Chalk River site, and officials in Ottawa fully informed of all of our activities. Our repairs will be sound and our fitness for service assessment will be complete and accurate to facilitate a CNSC decision that it is safe for the NRU reactor to return to service.

AECL is committed to full transparency with you, the CNSC and our stakeholders.

Returning NRU to safe reliable operation to support medical isotope production is our primary objective.