

## Lessons learned from the first-time application of current decommissioning regulations in Sweden, and possible improvements to future regulatory supervision

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Economic considerations have resulted in decisions by nuclear power plant owners to advance the dates for the permanent shut down of four of Sweden's ten operating nuclear power reactors. These closures are to occur within the next five years and the decommissioning of the reactors is planned with very short transition and care and maintenance periods. This accelerated schedule is likely to put stress on a number of the arrangements for the waste management system in Sweden, including the national financing arrangements for waste and decommissioning and the supervisory work of the national nuclear and radiation safety regulator. In order to meet the latter challenge, the Swedish Radiation Safety Authority (SSM) will have to apply lessons learned from regulatory supervision of decommissioning projects to-date. The presentation will highlight lessons learned from the first-time application of current regulations during regulatory supervision of ongoing Swedish decommissioning projects. It will identify possible improvements to coming regulatory supervision as well and how these could be addressed in the review of SSM's current decommissioning regulations.

Currently there are three decommissioning projects being undertaken in Sweden: two boiling water reactors at the Barsebäck nuclear power plant; two material test reactors in Studsvik; and the uranium mining and milling facilities in Ranstad. Barsebäck Unit 1 was shut down in 1999, followed by Unit 2 in 2005. Since then these units are in a care and maintenance phase. In 2016 the reactors internals are planned to be dismantled and temporarily stored in a new facility on the site. The reactors in Studsvik (one tank type and one mobile pool type) were permanently shut down in 2005. The reactors were dismantled in 2015 and preparations for decommissioning of the biological shield and the remainder of the facility are ongoing. The uranium mining and milling facilities in Ranstad were constructed and operated in the 1960s. The uranium mine and mill tailings deposits were restored and covered in the 1990s. Currently, decommissioning of the remaining facility at Ranstad is proceeding and is planned to be concluded in 2017.

### Country or International Organization

Swedish Radiation Safety Authority (SSM)

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