

Swedish Radiation Safety Authority

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Date: 22nd June 2016
Your reference: Thomas Hansson
Reference No.: SSM2016-1980
Document No.: SSM2016-1980-8

Request for additional information within the review areas organisation, management & governance, and personnel radiation protection

Introduction

The Swedish Radiation Safety Authority (SSM) has carried out an initial review of the review areas organisation, management and governance, and personnel radiation protection of the application for installation that European Spallation Source ERIC (ESS) submitted to the authority on 3rd May 2016. The initial review has been based on the preliminary safety analysis report, self assessment, status report and associated references.

The review is based on the specification of requirements described in the regulations and issued conditions. The current regulations for this review are *SSMFS 2008:27* (only those parts related to personnel radiation protection), *SSMFS 2008:29*, *SSMFS 2008:51* and *SSMFS 2008:52*. The current conditions for this review are the conditions on the organisation, management and governance (B7-B9) and the conditions on protection of workers (B13-B22) in Chapter 1 of the *Special Conditions for the ESS facility in Lund*.

The initial review has been carried out by Investigator Steve Selmer and Inspectors Tomas Andersson and Pia Eriksson.

Additional information requested

In order for SSM to be able to carry out a peer review of the review areas organisation, management and governance, and personnel radiation protection, the ESS application must be supplemented with the following information.

Radiation protection expert function

Requirement: B9e, iv-v in Chapter 1 of the appendix to the conditions, §5 SSMFS 2008:27, and point 1 in SSMFS 2008:29.

ESS document: 14.1 in the status report (ESS-0057839)

The reasoning behind the independent status of the radiation protection expert function in relation to production targets or comparable business considerations is missing. ESS needs to supplement its application with a report on how the independent status of the radiation protection expert function in relation to production targets can be achieved.

Categorisation of workers

Requirement: Chapter 4 of SSMFS 2008:51

ESS document: 15.6 in the status report (ESS-0057839)

The reasoning behind the categorisation of workers (including guest researchers) is missing.

Supplement with more detailed information regarding categorisation of workers (including guest researchers). ESS also needs to describe how verification of the categorisation of workers and workplaces will be carried out.

Exposure monitoring, exposure monitoring systems, and measuring

Requirement: Chapter 5 of SSMFS 2008:51, B19-B22

ESS document: 15.7 in the status report (ESS-0057839)

The reasoning behind exposure monitoring of workers (including guest researchers) and visitors is missing.

Supplement with presentation showing information on the exposure monitoring systems, including those for neutron dosimetry, which may be considered. A report of the pros and cons between the different systems shall be included. It should also state which personal dosimetry laboratory may be considered for supplying personal dosimeters or if ESS intends to apply for own approval.

Furthermore, the reasoning behind contamination measurements, full-body measurements, management and reporting of unexpected events, as well as reporting of exposure monitoring of internal irradiation of personnel within the ESS facility, shall be developed.

Quality manual and exposure monitoring of the area

Requirement: 9 and §13-15 of SSMFS 2008:27

ESS document: 15.10 in the status report (ESS-0057839)

The reasoning behind the quality manual and exposure monitoring of the area is missing.

Supplement with a report on the quality manual. It is worth noting that this requirement will be included in the requirement on the management system in the future. Furthermore, a report on hand instruments and other instrumentation for measuring radiation, as well as how it shall be ensured that these are kept calibrated, shall be attached.

The self assessment and status report in general

ESS document: appendices 3 and 11-14, and pages 20-21 of the status report

SSM believes that the self assessment can be developed, as at present it is more referencing than reasoning. ESS frequently refers to its responses to other paragraphs and to chapters in the PSAR. These references in several instances are incorrect/unclear and must be revised; see for example self assessment appendix 13, SSMFS 2008:51 where the status for Chapter 3, §3 is "see response to Chapter 3, §3".

SSM has even noted that ESS gives as a status that certain parts shall be addressed by “adding to the management system”. As SSM shall determine if ESS has the prerequisites to fulfil the requirements, such references are not sufficient from a review standpoint. The management system is described in general in the PSAR, but SSM has no concrete understanding of its status.

SSM therefore believes that the self assessment needs to be updated and supplemented with clear justifications as to how the requirements are fulfilled/will be fulfilled, and why ESS in certain cases deviates from the authority’s requests prior to stage 2, and instead moves them forward to stage 3 on their own initiative. This does not mean that SSM requires ready solutions or established routines, but rather reasoning that describes the status and present situation in relation to the current specification of requirements that applies. However, it is important for the continuity of the review process that there is transparency and traceability throughout the handling of the licensing process.

Presentation of additional information and continued review

ESS shall notify SSM when the abovementioned additional information requested can be presented to the authority. ESS shall, in conjunction with the additional information to SSM, ensure that related parts of the Preliminary Safety Analysis Report (PSAR) and self assessment are updated, as well as analyse and present to SSM how the additional information has affected the safety analysis report. In case of changes to the PSAR, amendments shall be traceable.

Once SSM has received the incoming additional information, the authority will inform if the documentation is sufficient to go over to a peer review within the review areas.

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