International Conference on Advancing the Global Implementation of Decommissioning and Environmental Remediation Programmes CN-238

Contribution ID: **28** Type: **Poster**

Remediation of the Russian Nuclear Legacy Sites. Relevant Issues of Regulatory Supervision.

Tuesday 24 May 2016 09:00 (4h 30m)

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Abstract: As part of the national policy of the Russian Federation in management of spent fuel and radioactive waste in the Russia, the Federal Targeted Program on Nuclear and Radiation Safety is approved. This Program provides a landmark reduction in amount of nuclear and uranium legacy. Start of this work (regulatory issues) at the legacy sites was given 10 years ago in the framework of the Russian-Norwegian cooperation at the nuclear legacy sites(NLS) in the Northwest Russia, as well as in the implementation of the Federal Targeted Program "Decommission and Dismantlement of arms and military equipment" (2005) (legacy sites in the Far East Russia). The accumulated experience in enhancing the safety culture during remediation of former naval shore technical bases in the North West and Far East Russian regions is discussed in this paper.

1. INTRODUCTION

In the 1960s, in the Northwest and Far East regions of Russia, shore technical bases of the Navy were established. After the expiration of the project resources, the infrastructure of facilities degraded, resulting in a serious potential threat of radioactive contamination of the environment. According to the decree of the Russian Government these bases have been transferred under the management of the State Corporation "Rosatom" for the purpose of their environmental remediation. FMBA is the official regulatory body at the Rosatom's facilities[1]. It is responsible for independent control and supervision of radiation safety. This paper is focused on the main results of scientific and practical activities in regulatory supervision during remediation of former shore technical bases of nuclear submarines of the Russian Navy.

2. METHODS

In order to identify the most important issues requiring supervision and enhanced regulation during remediation of former technical bases, the initial radiological threats were assessed. The results of radiological threat assessment at the initial stage of the STS remediation, focused the regulatory activities in the following areas: RP of the workers, public&environment RP, emergency response and preparedness[2].

3.RESULTS

Protection of workers. The AndreevaPlanner software has been developed which helps to generate and simulate various scenarios of radiation hazardous operations and select the best option in order to provide effective protection of the workers. Public&Environmental RP. Our experience shows that environmental remediation of the nuclear legacy sites requires the improvement of the radiation-hygienic monitoring methodology, based on the comprehensive assessment of the contamination both by radiation and by chemical factors. Databases have been developed for each nuclear legacy site. Radioecological maps were developed for the purposes of visualization of the changing radioecological situation. The results of the radiation monitoring as of 2005-2013 characterize the radiation situation in the supervision area of the NLS as normal (annual public doses are less than 1mSv), with no trend towards deterioration[2,3]. The emergency response and preparedness. In order to work out the elements of the response to radiological accidents and emergencies, emergency training was performed in 2006 at the Andreeva Bay STS and in 2009 at the SevRAO facility "Ostrovnoy".

1. CONCLUSIONS

 The development of methodology of comprehensive radiation and chemical monitoring and enhancing models to assess radiation and chemical risks are necessary. It is also necessary to consider the feasibility of establishing reference levels in terms of chemical factors
 There is an urgent need to develop practical guidelines on procedure of reference levels establishment for the purpose of optimization of the public RP under various scenarios of legacy site remediation.
 Public awareness and development of effective communication technologies to improve cooperation between local authorities and the population

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Country or International Organization

Russia

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 Forms A and B via the official channels

YES

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Session Classification: Session 2 - Poster

Track Classification: Regulatory framework and standards for decommissioning and environmental remediation