

Committee Report: JCI-TC124A

Technical Committee on the Containment of Radioactive Contaminants and Safe Use of Concrete Materials

委員会報告：JCI-TC124A

放射性物質の封じ込めとコンクリート材料の安全利用調査研究委員会

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Abstract

Following the accident at the Fukushima Daiichi Nuclear Power Plant (NPP) caused by the Tohoku-Pacific Ocean Earthquake, highly radioactive debris (melted nuclear fuel) is still left untouched in the containment vessel today. In addition, large amounts of contaminated water containing radioactive materials remain at the site including not only the cooling water supplied to the reactor core but also groundwater that has flowed into the site from the outside. This situation is posing critical challenges including the treatment, temporary storage and leakage prevention of the contaminated materials and water. Meanwhile, the radioactive materials released by the Fukushima Daiichi NPP dispersed and fell as airborne particulate matter such as aerosols, and caused widespread contamination of the environment including forests, agricultural lands, cities and towns, materials left outside, or rubble created by the earthquake and the tsunami. Technologies for the treatment, disposal and reuse of these contaminated concrete materials are in great need. This report summarizes the activities regarding this issue.

1. Introduction

Large amounts of radioactive materials were released into the environment from the accident at the Fukushima Daiichi NPP caused by the Tohoku-Pacific Ocean Earthquake, and highly radioactive debris (melted nuclear fuel) is still left untouched in the containment vessel today. Furthermore, large amounts of contaminated water containing radioactive materials remain at the site including not only the cooling water supplied to the reactor core but also groundwater that

has flowed into the site from the outside. This situation is posing critical challenges including the treatment, temporary storage and leakage prevention of the contaminated materials and water. The establishment of a methods framework for reusing concrete materials and debris contaminated by radioactive materials, as well as the containment of waste and soil affected by radioactive materials are also critical challenges that must be dealt with. With the aim to make.....