

The world's highest radiation-resistant lubricants supporting decommissioning of the nuclear reactor

Yoshikazu Hayashi, MORESCO Corporation

Advanced Specialist of The Radiation-Resistant Lubricants

Abstract

MORESCO-HIRADs, the world's most radiation resistant lubricants, are widely installed in applications such as decommissioning, accelerator, radiomedicine and upcoming nuclear fusion. In decommissioning, it has not only been installed in the recent "trial debris retrieval equipment", but is beginning extended to the upcoming "expanded debris retrieval equipment".

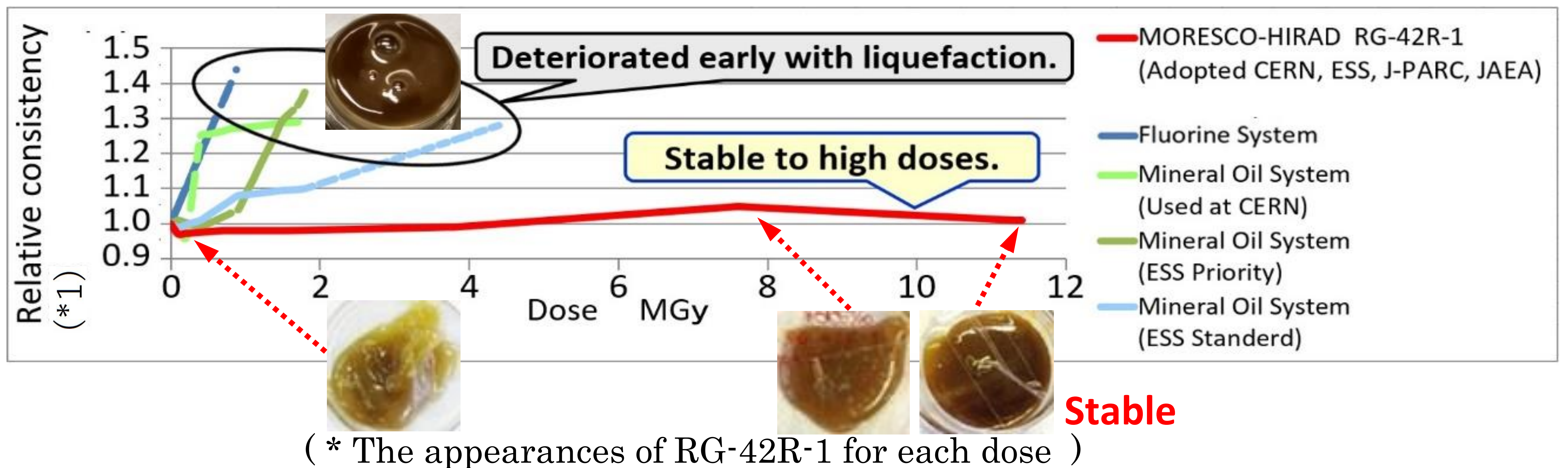
1. Introduction

We are conducting valuable studies on the lubricants (oils and greases) with international major academic institutions, so as to contribute to stable operations of worldwide equipment under harsh radiations, including decommissioning.

Some of these are presented below, with examples of the application for decommissioning.

2. The irradiation-evaluations and the findings for the lubricants

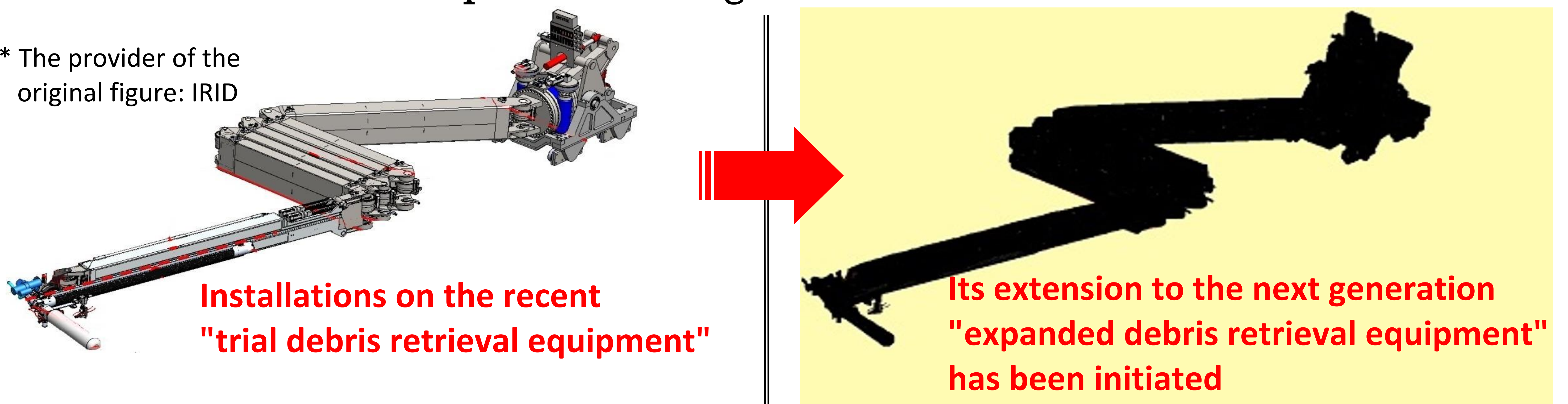
With the European accelerator projects, CERN & ESS ~ 'The greases' consistency (=hardness) changes (=deterioration) with a neutron-dominated mixed ray



(*1) is calculated with each sample's respectively value at the time of non-irradiation as "1.0".

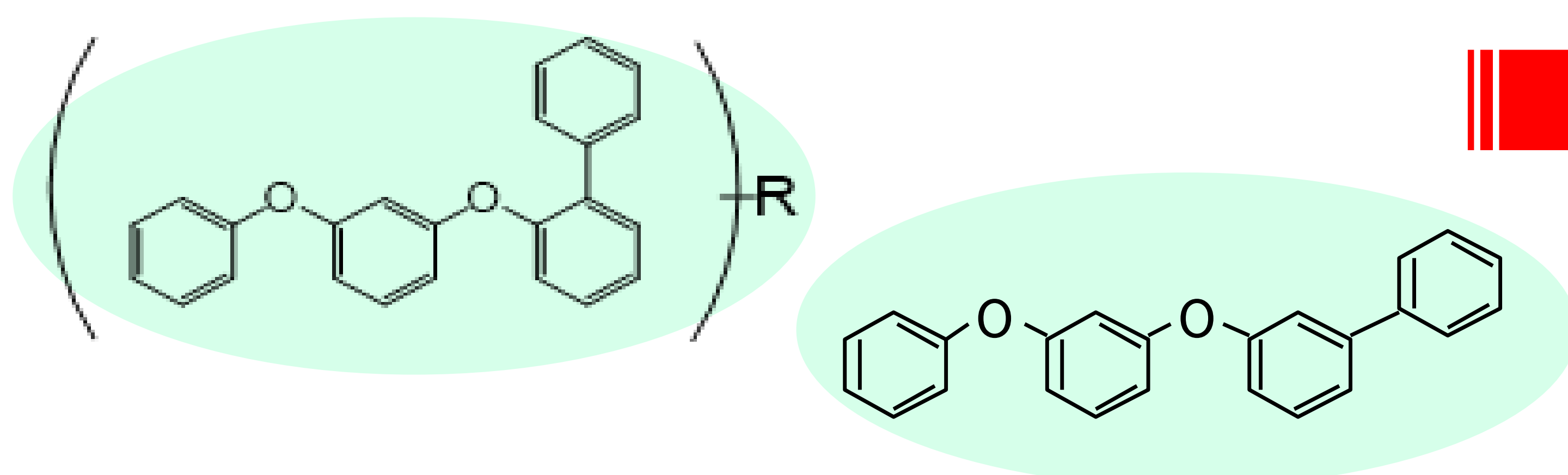
3. The installations-examples of existing MORESCO-HIRADs for "Fukushima"

* The provider of the original figure: IRID

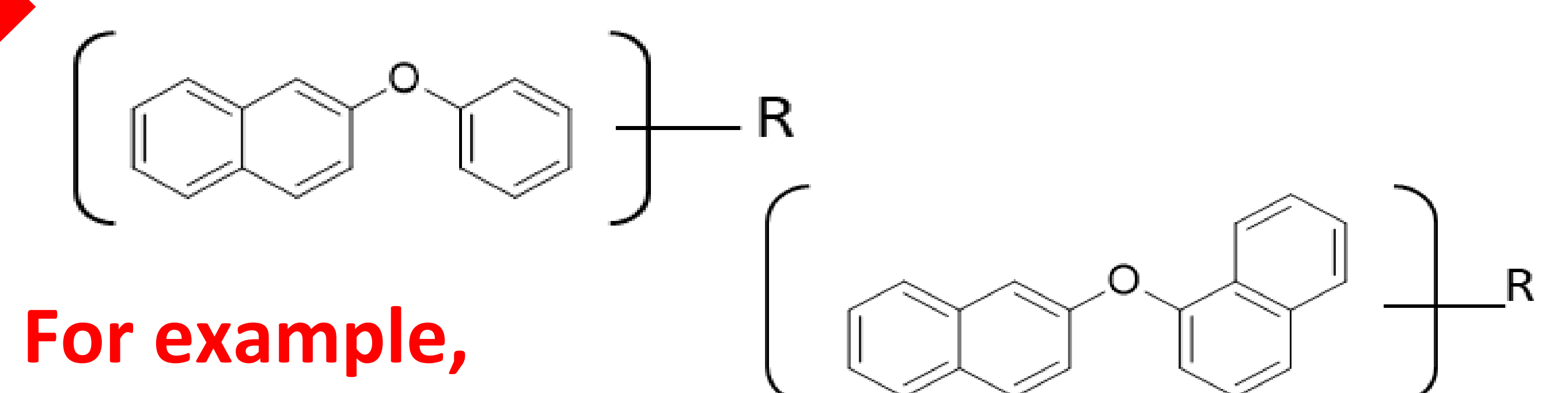


4. Creations of new structural syntheses, not limited to the current ones

The structures of the existing base oils



The structures of the newly synthesised and to be evaluated base oils



Contact details for inquiries - Tel: +81 78 303 9010, e-mail : hayashi@moresco.co.jp