

Extending Reactor Licenses to the Extreme

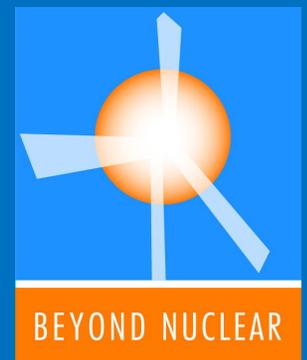
TOPIC #1

**Should NRC consider developing guidance
to operate U.S. reactors to 100 years?**

JANUARY 21, 2021

PAUL GUNTER

**REACTOR OVERSIGHT PROJECT
BEYOND NUCLEAR**



Should the NRC proceed with developing guidance to extend reactor operating licenses to 100 years?

Our constituents say “NO”

The technical issues needed to meet the required “reasonable assurance” standard for operational reliability and safety throughout any requested relicensing period are but one of a set of significant issues that need to be addressed.

Among many other outstanding issues to be included are:

- the continued absence of long term radioactive waste management;**
- health impact studies from operational and accidental radioactive releases;**
- the industry’s steady decline of economic performance;**
- nuclear power’s unsustainability;**
- environmental justice issues and the uranium fuel chain;**
- vintage nuclear power stations are not sited for climate change;**
- the advent of reliable, competitive and abundant renewable energy**

PNNL-27120



Criteria and Planning Guidance for Ex-Plant Harvesting to Support Subsequent License Renewal

December 2017

P Ramuhalli
R Devanathan
RM Meyer

SW Glass
K Knobbs



Prepared for the U.S. Nuclear Regulatory Commission
under a Related Services Agreement with the U.S. Department of Energy
CONTRACT DE-AC16-75RL01830

U.S. DEPARTMENT OF
ENERGY

To answer the question of extending reactor licenses to 100 years, NRC and industry must first scientifically address the identified safety-critical knowledge gaps in current age management programs and the license extension review process

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Excerpted from the Abstract

“ A key challenge will be to better understand likely materials degradation mechanisms in these components and their impacts on component functionality and safety margins. Research addressing many of the remaining technical gaps in these areas for SLR may greatly benefit from materials sampled from plants (decommissioning and operating).”

“This document describes a potential approach for sampling (harvesting) materials that focuses on prioritizing materials using a number of criteria.”

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Excerpted from the Summary

“Many of remaining questions regarding degradation of materials will likely require a combination of laboratory studies as well as other research conducted on materials sampled from plants (decommissioning and operating).”

Excerpted from 2.0 Nuclear Plant Materials Harvesting

“Where available, benchmarking can be performed using surveillance specimens. In most cases, however, benchmarking of laboratory tests will require harvesting materials from reactors.”

NRC “scrubbed” report removes technical knowledge “gaps” and recommendations to “require” strategic harvesting at decommissioning reactors and laboratory testing aged materials to support license renewal reviews

“Big picture, I think that the entire report needs to be scrubbed for text that points to gaps and if issued we will need a stronger basis for why we will grant renewed licenses before the harvesting and testing is completed.”

Anonymous, NRC/NRR/ License Renewal Division technical staff (FOIA 2018-000831)

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