February 16, 2001

Dr. Masashi Hirano
Deputy Manager, Planning and Analysis Division
Nuclear Safety Research Center
Tokai Research Establishment
Japan Atomic Energy Research Institute
Tokai-mura, Naka-gun
Ibaraki-ken, 319-1195
Japan

Dear Dr. Hirano:

The purpose of this letter is to invite JAERI participation in an upcoming USNRC research activity to characterize the effects of higher fuel burnups and mixed oxide (MOX) fuel designs on fission product source terms for accident analysis. Current NRC regulatory criteria (Regulatory Guide 1.183) allow use of the more realistic revised source term (NUREG-1465) which is based, in part, on data up to approximately 45 GWd/mt. It is anticipated that, in the U.S., the maximum burnup may be extended to about 75 GWd/mt and, for special cases, up to one-third of the core may use MOX fuel. Accordingly, the NRC must consider how, if necessary, the source term should be modified to account for new and different fuel design characteristics.

To accomplish these objectives the NRC is forming a group of experts who have experience with fuel behavior, severe accident thermal hydraulics, fission product release and transport phenomena, and accident calculations, in order to review various accident sequences and identify phenomena, processes and parameters that affect the fission product source term.

In addition to interactively identifying and ranking the important phenomena related to fission product releases (ultimately to the containment), we will also ask the group for quantification of the overall relative impacts of higher burnups and MOX inventory on the NUREG-1465 source term.

We believe JAERI can make a significant contribution to this effort by providing their perspectives on the dominant phenomena influenced by fuel characteristics and by providing specific information on your research and testing that would reveal the impact of higher burnup and MOX fuels on fission product releases.

Currently we would estimate that the expert group would meet 2 - 3 times over a course of approximately 6 months, with the first meeting occurring in late April or early May.

Please advise us of your interest in participation and indicate the person which you would nominate (additional attendees from your organization may also participate by presenting information, as you prefer).

If you have any questions on this matter please contact me. We look forward to your participation in this important undertaking.

Sincerely,

/RA/

Farouk Eltawila, Acting Director
Division of Systems Analysis and Regulatory Effectiveness
Office of Nuclear Regulatory Research

If you have any questions on this matter please contact me. We look forward to your participation in this important undertaking.

Sincerely,

/RA/

Farouk Eltawila, Acting Director
Division of Systems Analysis and Regulatory Effectiveness
Office of Nuclear Regulatory Research

Distribution:
SMSAB R/F
DSARE R/F
CTinkler R/F
PNorian
JSchaperow

C:\Hirano.wpd
*See previous concurrence

OAR in ADAMS? (Y or N) Y ADAMS ACCESSION NO.: ML010470439 TEMPLATE NO. RES-006
Publicly Available? (Y or N) Y DATE OF RELEASE TO PUBLIC 5 days SENSITIVE? N
To receive a copy of this document, indicate in the box: "C" = Copy without enclosures **"E"** = Copy with enclosures **"N"** = No copy

OFFICE	SMSAB		AC:SMSAB		AD:DSARE	
NAME	CTinkler:adl		JRosenthal		FEltawila	
DATE	2/15/01*		2/15/01*		2/16/01*	

(RES File Code) RES