From: Giuseppe Palmiotti
Sent: Friday, February 05, 2010 16:09
Subject: FW: Simplified RZ Models of 1000 MWt ABR Core Concepts
Attachments: ABR1000_RZ-models.doc


Dear colleagues,

Please, see below and attached file. Dr. Yang (thank you very much!) has
kindly provided the specifications of the ABR concept.

As agreed, we will retain the oxide fuel startup configuration as the
target for our adjustment (i.e. uncertainties on integral parameters will
be evaluated before and after adjustment).

The other two configurations (metal fuel and recycled oxide fuel) will be
used for testing out of range of application designs.

In order to simplify calculations, please, ignore lumped fission product
densities.

Pino


----- Original Message -----
From: "Yang, Won Sik"
Sent: 02/04/2010 09:39 AM CST
To: Giuseppe Palmiotti
Cc: SALVATORES Massimo; "McKnight, Richard D."; "Aliberti, Gerardo"
Subject: Simplified RZ Models of 1000 MWt ABR Core Concepts


Pino,

Please find attached the simplified RZ models of 1000 MWt ABR core
concepts.

In FY 2007, we developed two core concepts for both metal and oxide cores:
startup and TRU recycled equilibrium cores.
Weapons-grade plutonium was used as the TRU feed of the startup core
without recycling the ABR spent fuel.
For the recycled core, the TRU recovered from the ABR spent fuel was used
as the primary TRU feed and the TRU from LWR spent fuel was used as the
makeup feed.

However, according to DOE's directions in FY 2008, we did not have an
opportunity to design transition cycles. Thus, the "startup core" is an
equilibrium cycle core, not a conventional startup core loaded with all
fresh fuels. As a result, the beginning of cycle compositions include
higher actinides and fission products which were modeled with five lumped
fission products.

To simplify the proposed cross section adjustment exercise, it is
suggested to replace the lumped fission products with a single element
(e.g., Mo) or eliminate them. If you have any questions about the
proposed models, please let me know.

Won Sik