

**From:** [Moore, Brian R. \(GE Power & Water\)](#)  
**To:** [Yarsky, Peter](#); [Harrison, James F. \(GE Power & Water\)](#); [Philpott, Stephen](#)  
**Cc:** [John.Rea@gnf.com](mailto:John.Rea@gnf.com)  
**Subject:** RE: PARCs Qualification / Hatch Gamma Scan  
**Date:** Tuesday, July 10, 2012 3:46:41 PM  
**Attachments:** [Hatch-GS-Bundles4&5.pdf](#)

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Peter,

John Rea and I have come to the conclusion that the descriptions for Type 4 and Type 5 are both missing pin-wise Gd2O3 loadings. The attachment provides bundle descriptions taken from internal reports regarding these fuels/gamma scans and are more complete. These match our own bundle databases when we did the simulation. I cannot speak as to why the EPRI report was not more complete, but it was done a long time ago.

Its nice though when your methods give you indications that something is wrong with your inputs.

Brian

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**From:** Yarsky, Peter [mailto:Peter.Yarsky@nrc.gov]  
**Sent:** Friday, July 06, 2012 12:37 PM  
**To:** Harrison, James F. (GE Power & Water); Philpott, Stephen; Moore, Brian R. (GE Power & Water)  
**Subject:** RE: PARCs Qualification / Hatch Gamma Scan

Brian,

Jim H volunteered you to answer what I hope is a quick question regarding the Hatch 1 EOC3 gamma scan campaign. Actually, while trying to validate our PARCS code against the gamma scan, we encountered some difficulty in simulating the BOC3. We were hoping that it would be possible to confirm that the description of the Type 5 fuel in EPRI NP-2106, "Core Design and Operating Data for Cycles 2 and 3 of Hatch 1," February 1984, is a faithful description of the actual fuel bundle.

The reason we ask is that our predicted BOC3 k-eff is quite high whereas our k-eff and k-eff cycle swing for Cycles 1 and 2 were quite good. The report is somewhat vague in terms of gadolinia bearing pins – and while strictly the report indicates that the fuel contains no gadolinia bearing fuel, there are some portions of the report that refer to gadolinia in the Type 5 fuel.

So, what we are curious about is if there is something that we are missing in terms of the Type 5 fuel design that may not be described clearly in the EPRI report.

Thank you in advance.

Peter Yarsky, Ph.D.  
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**From:** Harrison, James F. (GE Power & Water) [\[mailto:james.harrison@ge.com\]](mailto:james.harrison@ge.com)  
**Sent:** Tuesday, July 03, 2012 9:57 AM  
**To:** Philpott, Stephen; Yarsky, Peter; Moore, Brian R. (GE Power & Water)  
**Subject:** PARCs Qualification / Hatch Gamma Scan

Hi Steve

Sorry to be slow on your request.

Please have Peter contact Brian directly regarding Hatch gamma scan questions.

Brian can understand the specifics and draw other resources in as necessary.

Jim H

PS Brian will be out 7/5.