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February 16, 1983

File
LB/LAN:007:83

Mr. G. A. Schwenk
Core Performance Branch
U.S. Nuclear Regulatory Commission
Washington, D.C.

Subject: Stability Audit Calculation Input; Equilibrium 9x9 Reload
             Core Cross-Section Reduction

Reference: Letter to G.A. Schwenk from L.A. Nielsen dated February
             8, 1982.

Enclosed is a tape containing collapsed cross-sections for the 9x9 equili-
brium reload core described in Reference 1. A listing cf the cross-
sections on the tape is given in Attachment #13. These cross-sections
are flux-weighted and describe the equilibrium 9x9 core with one radial
region and 8 axial regions. The data is in the COTRAN cross-section
format.

The cross-section data presented in Attachment #13 was derived in a
fashion similar to that used in the Cycle 9 Reload Analysis. Prior to
performance of stability calculations, the axial power distribution
calculated by the stability model must be compatible with that provided
on the "0" type cards. This can be accomplished by slight adjustments
in the nodal cross-section values found in Attachment #13 or by adjusting
top and bottom leakage terms in your model. In order to properly predict
reactivity effects consistent with XTGBWR, further normalization of the
cross-sections may be required to insure that a change in reactivity of
+0.00493 $\Delta K/K$ results from a +50 psia change in core pressure. This
latter normalization is also required prior to the stability calculation.

The axial region dimensions are given below:

Axial Region Dimensions

Region	Axial Region Height (Inches)
1 (top)	6
2	24
3	24
4	24
5	24
6	18
7	18
8 (bottom)	6

Y601
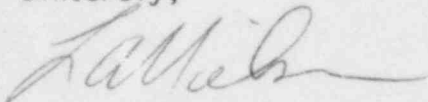
The file size on the tape is 2048 records and are in card images. The information is 1600 BPI and on Logical Unit #1. Please return the tape when you have completed the data transfer.

If you have any questions, please give me a call.

Sincerely,

L. A. Nielsen, Engineer
BWR Neutronics

LAN/mar
cc: P.J. Otaduy (ORNL)
     J.R. Wojnarowski (CECo)
     T.J. Rausch (CECo)

ATTACHMENT 13

Collapsed Cross-Sections for 9x9 Equilibrium
One Dimensional Core

S THESE ARE 9X9 EQUILIBRIUM 1-D XSEC REDUCED TO 8 AXIAL ZONES

THESE ARE 9X9 EQUILIBRIUM 1-D XSEC REDUCED TO 8 AXIAL ZONES
COTRAN FORMAT FOR DATA

NODE 1 IS TOP AND NODE 8 IS BOTTOM

NODE	INCHES
1	6
2	24
3	24
4	24
5	24
6	18
7	18
8	6

```
1  1  0 .65600       .00000       .21806
1  1  1 1.3616       1.5735       1.7913       1.3635       1.5824       1.8074
1  1  2 .30175       .42152       .62128       .30988       .43829       .65003
1  1  3 .60920E-02.61871E-02.55084E-02.10577E-01.99421E-02.90548E-0
1  1  4 .37088E-01.34795E-01.32548E-01.44788E-01.42169E-01.39337E-01
1  1  5 .24863E-02.23099E-02.20542E-02.25176E-02.23304E-02.20602E-02
1  1  6 .40066E-01.39518E-01.38560E-01.44321E-01.43407E-01.41904E-01
1  1  7 .18271       .17040       .15230       .18503       .17190       .15278
1  1  8 3.0282       2.9804       2.8908       3.3502       3.2736       3.1511
1  1  9 .21625E-01.15474E-01.10958E-01.19008E-01.12908E-01.84550E-02
2  1  0 .63228       .00000       .72581
2  1  1 1.3789       1.5953       1.8199       1.3791       1.6047       1.8367
2  1  2 .29735       .40744       .58045       .30569       .42495       .60909
2  1  3 .83520E-02.75659E-02.67688E-02.14803E-01.13351E-01.11642E-01
2  1  4 .57559E-01.54323E-01.50596E-01.63939E-01.59100E-01.53156E-01
2  1  5 .42303E-02.39995E-02.35349E-02.42501E-02.39817E-02.35742E-02
2  1  6 .78501E-01.75761E-01.71330E-01.92296E-01.88264E-01.81619E-01
2  1  7 .32308       .30609       .27922       .32454       .30470       .27453
2  1  8 6.0869       5.8453       5.4737       7.1568       6.8100       6.2631
2  1  9 .20152E-01.14103E-01.99166E-02.17690E-01.11701E-01.75394E-02
3  1  0 .50526       .00000       .94655
3  1  1 1.3779       1.5969       1.8220       1.3802       1.6063       1.8389
3  1  2 .29931       .41023       .58369       .30779       .42789       .61240
3  1  3 .84724E-02.77379E-02.68050E-02.14697E-01.13228E-01.11529E-01
3  1  4 .56221E-01.53133E-01.49772E-01.62706E-01.58065E-01.52482E-01
3  1  5 .39727E-02.37385E-02.33790E-02.34962E-02.37285E-02.33310E-02
3  1  6 .70514E-01.72055E-01.66028E-01.87491E-01.84008E-01.78019E-01
3  1  7 .30070       .28399       .25776       .30241       .28317       .25400
3  1  8 5.7233       5.5103       5.1771       6.7202       6.4246       5.9373
3  1  9 .20020E-01.14105E-01.98552E-02.17570E-01.11664E-01.74917E-02
4  1  0 .46349       .00000       1.0314
4  1  1 1.3782       1.5972       1.8225       1.3805       1.6066       1.8394
4  1  2 .29970       .41077       .58429       .30820       .42844       .61299
4  1  7 .84553E-02.77150E-02.67794E-02.14546E-01.13092E-01.11408E-01
4  1  4 .55229E-01.52171E-01.48915E-01.61777E-01.57217E-01.51787E-01
4  1  5 .38597E-02.36249E-02.32603E-02.38828E-02.36157E-02.32230E-02
4  1  6 .72187E-01.69764E-01.65730E-01.84730E-01.81280E-01.75422E-01
4  1  7 .29165       .27491       .24895       .29333       .27416       .24539
4  1  8 5.5332       5.3205       4.9935       6.4908       6.2043       5.7297
4  1  9 .20026E-01.14111E-01.98680E-02.17575E-01.11673E-01.75002E-02
5  1  0 .32234       .00000       1.1369
5  1  1 1.3783       1.5974       1.8227       1.3806       1.6068       1.8397
5  1  2 .29903       .41109       .58464       .30844       .42877       .61333
5  1  3 .84000E-02.76652E-02.67359E-02.14328E-01.12900E-01.11242E-01
5  1  4 .53884E-01.50861E-01.47690E-01.60515E-01.56059E-01.50797E-01
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