

**RUSSIA NUCLEAR DATA CENTER - RNDC**  
**Alias: CENTR JADERNYKH DANNYKH - CJD**  
**Institute of Physics and Power Engineering - IPPE**  
**Bondarenko Sq., 1, Obninsk 249033, Kaluga Region, RUSSIA**

Telephone: +7 (48439)98779 (M.Mikhaylyukova)

Fax: +7 (48439)68225

Internet: www.ippe.ru/podr/cjd

**MEMO 4C-4/195**

|          |                                        |
|----------|----------------------------------------|
| Date:    | 16 January 2012                        |
| To:      | Distribution                           |
| From:    | M.Mikhaylyukova                        |
| Subject: | SAMPLE coding, for NRDC2012 discussion |

SAMPLE coding in EXFOR was analyzed. A rule “sum of abundances of one sample has to be less or equal 1.” was checked. List of Subents containing mistakes and misprints is given at the end of this memo.

Typical mistakes:

- 1) “(“ is in 12<sup>th</sup> column, but does not follow by coded information.
- 2) Abundances are given in %.
- 3) Sum of abundances for one sample is > 1.
- 4) “ENR=” or “NAT” is absent.
- 5) Blanks, which are not allowed.
- 6) ENR=0 is given for isotope presented in SF1 of REACTION.
- 7) Lower case in name of isotope (e.g. Zn instead ZN)
- 8) There are 4 cases, when two or more samples for the same element are given in one Subent -23128, C1825, D0626, D4239. In such cases it's preferable to use pointers to point, that these are different samples or to present monitor sample information in Subent 001, and other investigated samples in Subents 002, 003 and so on.

**Proposals:**

- To add in EXFOR manual, SAMPLE:
  - o “abundances have to be given as not-dimensional, % are not allowed”
  - o “sum of abundances for one sample has to be less or equal 1.”
  - o “maximal values of abundances have to be given in free text only”
- To introduce checking of SAMPLE coding rule in checking codes, where it's possible.
- To correct listed Subents according to rules of SAMPLE coding.

**List of Subents containing mistakes of SAMPLE coding:**

( MM:... - my comments)

10357.005: (NH<sub>4</sub>)<sub>2</sub>U<sub>2</sub>O<sub>7</sub> samples.

13922.004: (97.28 %) target of 10 g in aluminum frame.

13922.005: (97.28 %) target of 10 g in aluminum frame.

13922.006: (97.28 %) target of 10 g in aluminum frame.

14110.010: (64-GD-152,ENR= 0.000108) MM:Sum 1.00001 >1.(max value somewhere?) .

14110.010: (64-GD-154,ENR= 0.009859) MM:Blank not allowed.

14110.010: (64-GD-155,ENR= 0.744233)

14110.010: (64-GD-156,ENR= 0.175674)

14110.010: (64-GD-157,ENR= 0.037513)

14110.010: (64-GD-158,ENR= 0.025336)

14110.010: (64-GD-160,ENR= 0.007278)

14110.012: (64-GD-152,ENR= 0.000108) MM:Sum 1.00001 >1.(max value somewhere?)  
14110.012: (64-GD-154,ENR= 0.009859) MM:Blank not allowed.  
14110.012: (64-GD-155,ENR= 0.744233)  
14110.012: (64-GD-156,ENR= 0.175674)  
14110.012: (64-GD-157,ENR= 0.037513)  
14110.012: (64-GD-158,ENR= 0.025336)  
14110.012: (64-GD-160,ENR= 0.007278)

14110.013: (64-GD-152,ENR = 0.000051) MM:Sum 1.00001 >1.(max value somewhere?)  
14110.013: (64-GD-154,ENR = 0.000753) MM:Blank not allowed.  
14110.013: (64-GD-155,ENR = 0.013515)  
14110.013: (64-GD-156,ENR = 0.073627)  
14110.013: (64-GD-157,ENR = 0.696623)  
14110.013: (64-GD-158,ENR = 0.194431)  
14110.013: (64-GD-160,ENR = 0.021000)

14110.014: (64-GD-152,ENR = 0.000051) MM:Sum 1.00001 >1.(max value somewhere?)  
14110.014: (64-GD-154,ENR = 0.000753) MM:Blank not allowed.  
14110.014: (64-GD-155,ENR = 0.013515)  
14110.014: (64-GD-156,ENR = 0.073627)  
14110.014: (64-GD-157,ENR = 0.696623)  
14110.014: (64-GD-158,ENR = 0.194431)  
14110.014: (64-GD-160,ENR = 0.021000)

14110.015: (64-GD-152,ENR = 0.000051) MM:Sum 1.00001 >1.(max value somewhere?)  
14110.015: (64-GD-154,ENR = 0.000753) MM:Blank not allowed.  
14110.015: (64-GD-155,ENR = 0.013515)  
14110.015: (64-GD-156,ENR = 0.073627)  
14110.015: (64-GD-157,ENR = 0.696623)  
14110.015: (64-GD-158,ENR = 0.194431)  
14110.015: (64-GD-160,ENR = 0.021000)

14110.016: (64-GD-152,ENR= 0.000108) MM:Sum 1.00001 >1.(max value somewhere?)  
14110.016: (64-GD-154,ENR= 0.009859) MM:Blank not allowed.  
14110.016: (64-GD-155,ENR= 0.744233)  
14110.016: (64-GD-156,ENR= 0.175674)  
14110.016: (64-GD-157,ENR= 0.037513)  
14110.016: (64-GD-158,ENR= 0.025336)  
14110.016: (64-GD-160,ENR= 0.007278)

14110.020: (64-GD-152,ENR= 0.000108) MM:Sum 1.00001 >1.(max value somewhere?)  
14110.020: (64-GD-154,ENR= 0.009859) MM:Blank not allowed.  
14110.020: (64-GD-155,ENR= 0.744233)  
14110.020: (64-GD-156,ENR= 0.175674)  
14110.020: (64-GD-157,ENR= 0.037513)  
14110.020: (64-GD-158,ENR= 0.025336)  
14110.020: (64-GD-160,ENR= 0.007278)

14110.021: (64-GD-152,ENR= 0.000108) MM:Sum 1.00001 >1.(max value somewhere?)  
14110.021: (64-GD-154,ENR= 0.009859) MM:Blank not allowed.  
14110.021: (64-GD-155,ENR= 0.744233)  
14110.021: (64-GD-156,ENR= 0.175674)  
14110.021: (64-GD-157,ENR= 0.037513)  
14110.021: (64-GD-158,ENR= 0.025336)  
14110.021: (64-GD-160,ENR= 0.007278)

14110.022: (64-GD-152,ENR= 0.000108) MM:Sum 1.00001 >1.(max value somewhere?)  
14110.022: (64-GD-154,ENR= 0.009859) MM:Blank not allowed.  
14110.022: (64-GD-155,ENR= 0.744233)  
14110.022: (64-GD-156,ENR= 0.175674)  
14110.022: (64-GD-157,ENR= 0.037513)  
14110.022: (64-GD-158,ENR= 0.025336)  
14110.022: (64-GD-160,ENR= 0.007278)

14110.023: (64-GD-152,ENR= 0.000108) MM:Sum 1.00001 >1.(max value somewhere?)  
14110.023: (64-GD-154,ENR= 0.009859) MM:Blank not allowed.  
14110.023: (64-GD-155,ENR= 0.744233)  
14110.023: (64-GD-156,ENR= 0.175674)  
14110.023: (64-GD-157,ENR= 0.037513)  
14110.023: (64-GD-158,ENR= 0.025336)  
14110.023: (64-GD-160,ENR= 0.007278)

14150.001: (weight 2.3 g) or 5 x 5 cm\*\*2 and 0.3 cm thick  
14150.001: (weight 16.6 g), the natSi targets 1.5 cm in diameter

14187.001: (10B/11B=18.80) dissolved in distilled water, pipeted  
14190.001: (235U-93.2%,238U-5.2%,234U-1.0%,236U-0.67%) or

14239.026: (72-HF-174,ENR=0.0008) MM:Sum 1.0001 >1.(max value somewhere?)  
14239.026: (72-HF-176,ENR=0.5617)  
14239.026: (72-HF-177,ENR=0.2696)  
14239.026: (72-HF-178,ENR=0.1060)  
14239.026: (72-HF-179,ENR=0.0249)  
14239.026: (72-HF-180,ENR=0.0371)

14239.027: (72-HF-174,ENR=0.0150) MM:Sum 1.0001 >1.(max value somewhere?)  
14239.027: (72-HF-176,ENR=0.0178)  
14239.027: (72-HF-177,ENR=0.0420)  
14239.027: (72-HF-178,ENR=0.8337)  
14239.027: (72-HF-179,ENR=0.0558)

14239.027: (72-HF-180,ENR=0.0356) MM:Sum 1.0001 >1.(max value somewhere?)  
14239.028: (72-HF-174,ENR=0.0150)  
14239.028: (72-HF-176,ENR=0.0178)  
14239.028: (72-HF-177,ENR=0.0420)  
14239.028: (72-HF-178,ENR=0.8337)  
14239.028: (72-HF-179,ENR=0.0558)  
14239.028: (72-HF-180,ENR=0.0356)

14239.029: (72-HF-174,ENR=0.0008) MM:Sum 1.0001 >1.(max value somewhere?)  
14239.029: (72-HF-176,ENR=0.5617)  
14239.029: (72-HF-177,ENR=0.2696)  
14239.029: (72-HF-178,ENR=0.1060)  
14239.029: (72-HF-179,ENR=0.0249)  
14239.029: (72-HF-180,ENR=0.0371)

14239.030: (72-HF-174,ENR=0.0150) MM:Sum 1.0001 >1.(max value somewhere?)  
14239.030: (72-HF-176,ENR=0.0178)  
14239.030: (72-HF-177,ENR=0.0420)  
14239.030: (72-HF-178,ENR=0.8337)  
14239.030: (72-HF-179,ENR=0.0558)  
14239.030: (72-HF-180,ENR=0.0356)

14239.031: (72-HF-174,ENR=0.0150) MM:Sum 1.0001 >1.(max value somewhere?)  
14239.031: (72-HF-176,ENR=0.0178)  
14239.031: (72-HF-177,ENR=0.0420)  
14239.031: (72-HF-178,ENR=0.8337)  
14239.031: (72-HF-179,ENR=0.0558)  
14239.031: (72-HF-180,ENR=0.0356)

14239.036: (72-HF-174,ENR=0.0008) MM:Sum 1.0001 >1.(max value somewhere?)  
14239.036: (72-HF-176,ENR=0.5617)  
14239.036: (72-HF-177,ENR=0.2696)  
14239.036: (72-HF-178,ENR=0.1060)  
14239.036: (72-HF-179,ENR=0.0249)  
14239.036: (72-HF-180,ENR=0.0371)

14239.037: (72-HF-174,ENR=0.0150) MM:Sum 1.0001 >1.(max value somewhere?)  
14239.037: (72-HF-176,ENR=0.0178)  
14239.037: (72-HF-177,ENR=0.0420)  
14239.037: (72-HF-178,ENR=0.8337)  
14239.037: (72-HF-179,ENR=0.0558)  
14239.037: (72-HF-180,ENR=0.0356)

14239.038: (72-HF-174,ENR=0.0150) MM:Sum 1.0001 >1.(max value somewhere?)  
14239.038: (72-HF-176,ENR=0.0178)  
14239.038: (72-HF-177,ENR=0.0420)  
14239.038: (72-HF-178,ENR=0.8337)  
14239.038: (72-HF-179,ENR=0.0558)  
14239.038: (72-HF-180,ENR=0.0356)

14239.039: (72-HF-174,ENR=0.0150) MM:Sum 1.0001 >1.(max value somewhere?)  
14239.039: (72-HF-176,ENR=0.0178)  
14239.039: (72-HF-177,ENR=0.0420)  
14239.039: (72-HF-178,ENR=0.8337)  
14239.039: (72-HF-179,ENR=0.0558)  
14239.039: (72-HF-180,ENR=0.0356)

14239.040: (72-HF-174,ENR=0.0150) MM:Sum 1.0001 >1.(max value somewhere?)  
14239.040: (72-HF-176,ENR=0.0178)  
14239.040: (72-HF-177,ENR=0.0420)  
14239.040: (72-HF-178,ENR=0.8337)  
14239.040: (72-HF-179,ENR=0.0558)  
14239.040: (72-HF-180,ENR=0.0356)

14239.041: (72-HF-174,ENR=0.0008) MM:Sum 1.0001 >1.(max value somewhere?)  
14239.041: (72-HF-176,ENR=0.5617)  
14239.041: (72-HF-177,ENR=0.2696)  
14239.041: (72-HF-178,ENR=0.1060)  
14239.041: (72-HF-179,ENR=0.0249)  
14239.041: (72-HF-180,ENR=0.0371)

14257.001: (92-U-233,ENR=0.9901) MM:Sum 1.0002 >1.(max value somewhere?)  
14257.001: (92-U-234,ENR=0.0074)  
14257.001: (92-U-235,ENR=0.0023)  
14257.001: (92-U-238,ENR=0.0004)

---

22006.029: (20050716A) Sample data added  
22358.002: (SPSDD,22354006)

22680.006: (82-PB-204,NAT=0.01284) (1.284+-0.020)% MM:Sum 1.0004 >1.(in errors limits?)  
22680.006: (82-PB-206,NAT=0.2712) (27.12+-0.26)%  
22680.006: (82-PB-207,NAT=0.2049) (20.49+-0.17)%  
22680.006: (62-PB-208,NAT=0.5111) (51.11+-0.24)%.

22680.007: (82-PB-204,NAT=0.01284) (1.284+-0.020)% MM:Sum 1.0004 >1.(in errors limits?)  
22680.007: (82-PB-206,NAT=0.2712) (27.12+-0.26)%  
22680.007: (82-PB-207,NAT=0.2049) (20.49+-0.17)%  
22680.007: (62-PB-208,NAT=0.5111) (51.11+-0.24)%.

22680.008: (82-PB-204,NAT=0.01284) (1.284+-0.020)% MM:Sum 1.0004 >1.(in errors limits?)  
22680.008: (82-PB-206,NAT=0.2712) (27.12+-0.26)%  
22680.008: (82-PB-207,NAT=0.2049) (20.49+-0.17)%  
22680.008: (62-PB-208,NAT=0.5111) (51.11+-0.24)%

22680.010: (82-PB-204,NAT=0.01284) (1.284+-0.020)% MM:Sum 1.0004 >1.(in errors limits?)  
22680.010: (82-PB-206,NAT=0.2712) (27.12+-0.26)%  
22680.010: (82-PB-207,NAT=0.2049) (20.49+-0.17)%  
22680.010: (62-PB-208,NAT=0.5111) (51.11+-0.24)%

22789.004: (93-NP-237,100.) Weight 12.82 +-0.08 milligram, 2

22789.005: (92-U-236,99.845)  
22789.005: (92-U-234,,0.00001)  
22789.005: (92-U-235,0.047)  
22789.005: (92-U-238,0.107)

22789.006: (92-U-236,ENR=0.99845) MM:Sum=1.15245 >1.  
22789.006: (92-U-235,ENR=0.047)  
22789.006: (92-U-238,ENR=0.107)

22789.008: (92-U-236,ENR=0.99845) MM:Sum=1.15245 >1.  
22789.008: (92-U-235,ENR=0.047)  
22789.008: (92-U-238,ENR=0.107)

22789.009: (92-U-236,ENR=0.99845) MM:Sum=1.15245 >1.  
22789.009: (92-U-235,ENR=0.047)  
22789.009: (92-U-238,ENR=0.107)

22789.012: (93-NP-237,100.) Weight 12.82 +- 0.08 milligram,  
22789.013: (93-NP-237,100.) Weight 12.82 +- 0.08 milligram,

22932.003: (64-GD-152,ENR=0.0002) MM:Sum=1.0004 >1. (max values somewhere?)  
22932.003: (64-GD-154,ENR=0.0016)  
22932.003: (64-GD-155,ENR=0.0081)  
22932.003: (64-GD-156,ENR=0.0221)  
22932.003: (64-GD-157,ENR=0.9096)  
22932.003: (64-GD-158,ENR=0.0508)  
22932.003: (64-GD-160,ENR=0.0080)

22932.010: (64-GD-152,ENR=0.0002) MM:Sum=1.0004 >1. (max values somewhere?)  
22932.010: (64-GD-154,ENR=0.0016)  
22932.010: (64-GD-155,ENR=0.0081)  
22932.010: (64-GD-156,ENR=0.0221)  
22932.010: (64-GD-157,ENR=0.9096)  
22932.010: (64-GD-158,ENR=0.0508)  
22932.010: (64-GD-160,ENR=0.0080)

22932.011: (64-GD-152,ENR=0.0002) MM:Sum=1.0004 >1. (max values somewhere?)  
22932.011: (64-GD-154,ENR=0.0016)  
22932.011: (64-GD-155,ENR=0.0081)  
22932.011: (64-GD-156,ENR=0.0221)  
22932.011: (64-GD-157,ENR=0.9096)  
22932.011: (64-GD-158,ENR=0.0508)  
22932.011: (64-GD-160,ENR=0.0080)

23074.001: (26 MBq) of neptunium oxide NpO<sub>2</sub> powder, packed in Al  
23074.001: (0.2mm) Al container of 25 mm diameter with sample  
23074.001: ( Eu-152, Co-60, Cs-137) were used in measurement.  
23075.001: (0.1 mm thickness, weight 5.6395+-0.0001 mg, chemical

23080.002: (64-GD-152,ENR=0.0001) MM:Sum=1.0001 >1. (max values somewhere?)  
23080.002: (64-GD-154,ENR=0.0011)  
23080.002: (64-GD-155,ENR=0.0196)  
23080.002: (64-GD-156,ENR=0.9379)  
23080.002: (64-GD-157,ENR=0.0253)  
23080.002: (64-GD-158,ENR=0.0120)  
23080.002: (64-GD-160,ENR=0.0041)

23080.003: (64-GD-152,ENR=0.0001) MM:Sum=1.0006 >1. (max values somewhere?)  
23080.003: (64-GD-154,ENR=0.0001)  
23080.003: (64-GD-155,ENR=0.0096)  
23080.003: (64-GD-156,ENR=0.017)  
23080.003: (64-GD-157,ENR=0.0356)  
23080.003: (64-GD-158,ENR=0.920)  
23080.003: (64-GD-160,ENR=0.0182)

23089.001: (38-SR-84,ENR=0.0001) MM:Sum=1.0001 >1. (max values somewhere?)  
23089.001: (38-SR-86,ENR=0.0002)  
23089.001: (38-SR-87,ENR=0.0008)  
23089.001: (38-SR-88,ENR=0.9990)

23092.001: (87.1+-1.2)% of Ge-76. 12 mm diameter, about 2 mm  
23098.005: (98.8% of Cm fraction) mainly the non-fissile isotopes  
23100.001: (H9 channel)

23128.001: (92-U-233,ENR=0.990) MM:Two different samples.\*\*\*\*\*  
23128.001: (92-U-235,ENR=0.99992)  
MM: MONITOR U-235 sample could be used in Suben 001, U-233 – in Subents 002-003

---

30099.001: (1.1E+6 fissions/minute) on thin platinum foil.  
30704.002: (92-U-233,0.9) 1.0 mg/cm<sup>2</sup> thickness, 45 mm diameter  
30704.003: (92-U-235,0.9) 1.0 mg/cm<sup>2</sup> thickness, 45 mm diameter  
30704.004: (94-PU-239,0.9) 1.0mg/cm<sup>2</sup> thickness, 45 mm diameter  
30928.001: (Gd-155(0.18%), Gd-156(0.33%), Gd-157(0.44%),  
31501.002: (metallic Al+metallic Fe) sample, 80\*80\*(5.7+1.3) mm,  
31501.002: (98.1+67.7) g.  
31501.003: (metallic Al+metallic Fe) sample, 80\*80\*(5.7+1.3) mm,  
31501.003: (98.1+67.7) g.  
31501.004: (metallic Al+metallic Fe) sample, 80\*80\*(5.7+1.3) mm,  
31501.004: (98.1+67.7) g.  
31501.009: (120.2+80.0 g)  
31501.010: (120.2+80.0 g)  
31501.011: (120.2+80.0 g)  
31591.002: (As<sub>2</sub>O<sub>3</sub> and As<sub>2</sub>O<sub>5</sub>) were individually irradiated under  
31603.001: (10.20 g/cm<sup>3</sup>) with a diameter of 62.98 +- 0.01 mm  
31616.001: (Wagner et al., 1990).  
31633.001: (Au)to 0.5-0.7mm (Ta and CrNi).  
31662.002: (0.214 +- 0.002) cm inner thickness sealed with an  
31662.003: (0.214 +- 0.002) cm inner thickness sealed with an

31698.004: (79-AU-198, NAT=1.) MM:Blank is allowed?  
31698.005: (79-AU-198, NAT=1.)

32650.001: (thickness 0.186 mg/cm<sup>2</sup>) and 1.84 mg (thickness

32672.001: (30-Zn-67,ENR=0.954) MM:Zn -> ZN  
32689.001: (30-Zn-67,ENR=0.954)

33011.001: (~ 500 micro gram), 99.48 atom % <sup>240</sup>Pu  
33011.001: ( ~ 96 micro gram) and 99.43 atom % <sup>244</sup>Cm  
33011.001: (~ 96 micro gram) were covered with 75 micro meter

33030.001: (100 micro g), <sup>239</sup>Pu (100 micro g), <sup>241</sup>Pu (25 micro

---

40068.001: (METAL) METALLIC SAMPLE OF NATURAL URANIUM WITH

---

C1439.001: (<sup>56</sup>Fe) and 12.1 mg/cm<sup>2</sup> (<sup>60</sup>Ni), respectively.  
C1461.001: (1-2 microg/cm<sup>2</sup>) layer of evaporated Au, and carbon  
C1604.001: (CD<sub>2</sub>)<sub>n</sub> deuterated polyethylene foil with thickness  
C1632.014: (<sup>48</sup>TiO<sub>2</sub>) enriched to 99.1% in <sup>48</sup>Ti on thin  
C1632.014: (20 mug/cm<sup>2</sup>) VYNS film  
C1632.015: (<sup>48</sup>TiO<sub>2</sub>) enriched to 99.1% in <sup>48</sup>Ti on thin  
C1632.015: (20 mug/cm<sup>2</sup>) VYNS film  
C1632.016: (<sup>48</sup>TiO<sub>2</sub>) enriched to 99.1% in <sup>48</sup>Ti on thin  
C1632.016: (20 mug/cm<sup>2</sup>) VYNS film  
C1670.001: (470+-60) mu-g/cm<sup>2</sup>-thick Pb targets (isotopic  
C1705.001: (0.2-2.0 mu-g/cm<sup>2</sup>) layer of evaporated Au and carbon  
C1724.001: (CH<sub>2</sub>)<sub>n</sub> foil with thickness of 7.9 mg/cm<sup>2</sup>, in which  
C1758.001: (CH<sub>2</sub>)<sub>n</sub> target with thickness of approx. 40 mu-m  
C1816.001: (OFHC) copper substrate. <sup>22</sup>Na ions were produced by

C1825.001: (7-N-15,ENR=0.98) Target used at Notre Dame MM:Two different samples\*\*\*\*  
C1825.001: (7-N-14,ENR=0.02)Ti15N targets were fabricated by  
C1825.001: (7-N-15,ENR=0.826) Target used at LUNA 2  
C1825.001: (7-N-14,ENR=0.174)  
MM: Pointers could be used with FACILITY

---

D0275.002: (E-LVL,64-GD-159) MM:EN-SEC has to be added in 1-11 positions.  
D0275.003: (E-LVL,64-GD-159)  
D0275.004: (E-LVL,64-GD-159)

D0280.001: (natural abundance 0.25%). The V<sub>2</sub>O<sub>5</sub> powder was  
D0364.001: (92.5% of <sup>7</sup>Li)was used as a target.

D0456.002: (EN-ERR-DIG) Digitizing error MM:ERR-ANALYS has to be added in 1-11 positions.  
D0456.002: (ERR-DIG) Digitizing error

D0479.001: (0.43%), <sup>66</sup>Zn (0.08%), <sup>64</sup>Zn (<0.01%), <sup>70</sup>Zn (0.09%)  
D0490.001: (Most runs were made with 1 to 1.5 mg/cm<sup>2</sup> of  
D0496.001: (12.39 %),<sup>111</sup>Cd(12.75 %),<sup>112</sup>Cd (24.07 %) and <sup>113</sup>Cd  
D0496.001: (12.26%).  
D0505.001: (0.1 or 0.05 mm thick) and the aluminium discs(1.2 or

D0547.001: (96.1% abundance, impurities : <sup>58</sup>Ni 1.95%, <sup>60</sup>Ni 1.31%,  
D0556.001: (99.99% pure, <sup>109</sup>Ag 48.35%,<sup>107</sup>Ag 51.65%)

D0626.001: (12-MG-25,NAT=0.1) MM:Two different samples\*\*\*\*\*

D0626.001: (12-MG-25,ENR=0.93)  
MM: Pointers could be used with FACILITY.

D0634.001: (0.5%), and 198Pt (0.06%) in the target enriched in  
D0634.001: (0.29%) in the target enriched in 196Pt.

D0639.001: (28-Ni-64,ENR=0.996) MM:Ni -> NI

D4198.001: (both >99.6% pure) with thicknesses of 10 and 25  
D4219.001: (54-XE-131,99.6) Highly enriched 131Xe gas (99.6%)

D4236.001: (68-ER-162,ENR=0.0006) MM:Sum=0.0012 >1. (max values somewhere?)  
D4236.001: (68-ER-164,ENR=0.0006)  
D4236.001: (68-ER-166,ENR=0.0114)  
D4236.001: (68-ER-167,ENR=0.956)  
D4236.001: (68-ER-168,ENR=0.0308)  
D4236.001: (68-ER-170,ENR=0.0018)

D4237.001: (99.99%, Sigma-Aldrich, USA) in a punch-and-die set

D4239.001: (34-SE-77,0.9177) MM:Three different samples\*\*\*\*\*  
D4239.001: (34-SE-78,0.9858)  
D4239.001: (34-SE-80,0.999)  
MM: SAMPLE information could be moved in corresponding Subents 002-005

D4249.001: (81-TL-203,NAT=29.52)  
D4249.001: (81-TL-205,NAT=70.48)

D5047.001: (content of tritium nuclei 40%) was used in d,t  
D5071.001: (47.2%), Zn-70(0.3%).  
D6010.001: (95.7%) + 113IN (4.3%)) thickness 1.2mg/cm\*\*2 and  
D6045.001: (thickness ~ 500 microgram/cm2) was used. In this

---

E1686.002: (26-FE-56,ENR=0) MM: SF1=26-FA-56 in REACTION  
E1686.003: (26-FE-56,ENR=0)  
E1686.004: (26-FE-56,ENR=0)  
E1686.008: (26-FE-56,ENR=0)  
E1686.009: (26-FE-56,ENR=0)  
E1686.010: (26-FE-56,ENR=0)  
E1686.014: (26-FE-56,ENR=0)  
E1686.015: (26-FE-56,ENR=0)  
E1686.016: (26-FE-56,ENR=0)  
E1686.017: (26-FE-56,ENR=0)  
E1686.018: (26-FE-56,ENR=0)  
E1686.019: (26-FE-56,ENR=0)  
E1686.020: (26-FE-56,ENR=0)  
E1686.021: (26-FE-56,ENR=0)  
E1686.022: (26-FE-56,ENR=0)  
E1686.023: (26-FE-56,ENR=0)  
E1686.024: (26-FE-56,ENR=0)  
E1686.025: (26-FE-56,ENR=0)  
E1686.026: (26-FE-56,ENR=0)

E1686.027: (26-FE-56,ENR=0)  
E1686.028: (26-FE-56,ENR=0)  
E1686.029: (26-FE-56,ENR=0)  
E1686.030: (26-FE-56,ENR=0)  
E1686.031: (26-FE-56,ENR=0)  
E1686.042: (26-FE-56,ENR=0)  
E1686.043: (26-FE-56,ENR=0)  
E1686.044: (26-FE-56,ENR=0)  
E1686.047: (26-FE-56,ENR=0)  
E1686.048: (26-FE-56,ENR=0)  
E1686.049: (26-FE-56,ENR=0)  
E1686.052: (26-FE-56,ENR=0)  
E1686.053: (26-FE-56,ENR=0)

|                              |                              |
|------------------------------|------------------------------|
| E1713.001: (26-FE-56,ENR=0)  | MM:SF1=26-FA-56 in REACTION  |
| E1793.001: (12-MG-26,ENR=0)  | MM:SF1=12-MG-26 in REACTION  |
| E2135.002: (28-NI-58,ENR=0)  | MM:SF1=28-NI-58 in REACTION  |
| E2135.003: (50-SN-120,ENR=0) | MM:SF1=50-SN-120 in REACTION |
| E2135.004: (28-NI-58,ENR=0)  | MM:SF1=28-NI-58 in REACTION  |
| E2135.008: (50-SN-120,ENR=0) | MM:SF1=50-SN-120 in REACTION |
| E2140.001: (3-LI-8,ENR=0)    | MM:SF1=3-LI-8 in REACTION    |

---

F0258.002:  $(8.14 \pm 0.31) \times 10^{16}$  at/cm<sup>2</sup>.  
F0535.001:  $(9.58 \pm 0.57) \times 10^{17}$ ,  
F0535.001:  $(5.72 \pm 0.17) \times 10^{17}$  K atoms\*cm<sup>-2</sup>  
F0667.017: ( 92.0%).  
F0712.001: (about 12  $\mu$ -g/cm<sup>2</sup>) of carbon.  
F0748.001: (it cannot be damaged by the beam), of high purity,  
F0833.001:  $(7.3 \pm 0.4) \times 10^{18}$  atoms of <sup>61</sup>Ni cm<sup>-2</sup>).

---

G0021.001: (57-LA-139,NAT=99.9%) 3790 mg  
G3105.001: (2mg/cm<sup>2</sup> thickness, 1.414x1.414 cm size) wrapped

---

L0078.001: (20 mg/cm<sup>2</sup>) and 20 aluminium catcher foils arranged so

---

T0074.002: (DATA-ERR) Upper limit of absolute uncertainty.

---

**Distribution list:**

[blokhin@ippe.ru](mailto:blokhin@ippe.ru),  
[chiba@earth.sgu.ac.jp](mailto:chiba@earth.sgu.ac.jp),  
[emmeric.dupont@oecd.org](mailto:emmeric.dupont@oecd.org),  
[exfor@nea.fr](mailto:exfor@nea.fr),  
[ganesan@barc.gov.in](mailto:ganesan@barc.gov.in),  
[gezg@ciae.ac.cn](mailto:gezg@ciae.ac.cn),  
[hongwei@ciae.ac.cn](mailto:hongwei@ciae.ac.cn),  
[jhchang@kaeri.re.kr](mailto:jhchang@kaeri.re.kr),  
[j.roberts@iaea.org](mailto:j.roberts@iaea.org),  
[kaltchenko@kinr.kiev.ua](mailto:kaltchenko@kinr.kiev.ua),  
[katakura.junichi@jaea.go.jp](mailto:katakura.junichi@jaea.go.jp),  
[kato@nucl.sci.hokudai.ac.jp](mailto:kato@nucl.sci.hokudai.ac.jp),  
[kiralyb@atomki.hu](mailto:kiralyb@atomki.hu),  
[l.vrapcenjak@iaea.org](mailto:l.vrapcenjak@iaea.org),  
[manuel.bossant@oecd.org](mailto:manuel.bossant@oecd.org),  
[manokhin@ippe.ru](mailto:manokhin@ippe.ru),  
[mwherman@bnl.gov](mailto:mwherman@bnl.gov),  
[nklimova@kinr.kiev.ua](mailto:nklimova@kinr.kiev.ua),  
[nicolas.soppera@oecd.org](mailto:nicolas.soppera@oecd.org),  
[n.otsuka@iaea.org](mailto:n.otsuka@iaea.org),  
[ogritzay@kinr.kiev.ua](mailto:ogritzay@kinr.kiev.ua),  
[otto.schwerer@aon.at](mailto:otto.schwerer@aon.at),  
[pronyaev@ippe.ru](mailto:pronyaev@ippe.ru),  
[r.forrest@iaea.org](mailto:r.forrest@iaea.org),  
[samaev@obninsk.ru](mailto:samaev@obninsk.ru),  
[sbabykina@yandex.ru](mailto:sbabykina@yandex.ru),  
[scyang@kaeri.re.kr](mailto:scyang@kaeri.re.kr),  
[V.Semkova@iaea.org](mailto:V.Semkova@iaea.org)  
[stakacs@atomki.hu](mailto:stakacs@atomki.hu),  
[stanislav.hlavac@savba.sk](mailto:stanislav.hlavac@savba.sk),  
[taova@expd.vniief.ru](mailto:taova@expd.vniief.ru),  
[tarkanyi@atomki.hu](mailto:tarkanyi@atomki.hu),  
[varlamov@depni.sinp.msu.ru](mailto:varlamov@depni.sinp.msu.ru),  
[vlasov@kinr.kiev.ua](mailto:vlasov@kinr.kiev.ua),  
[vmclane@optonline.net](mailto:vmclane@optonline.net),  
[v.zerkin@iaea.org](mailto:v.zerkin@iaea.org),  
[yolee@kaeri.re.kr](mailto:yolee@kaeri.re.kr)