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**Memo CP-C/489**

**Date:** March 8, 2021

**To:** Distribution

**From:** B. Pritychenko

**Subject:** Baghdad Atlas Compilation Duplicates

The Baghdad Atlas is a collection of g-ray data sets published by the Soviet-Iraqi group in 1978 [1]. The authors of this work did not produce any reaction data sets, however they left plenty of information that can be used to extract reaction cross when reasonable assumptions about incoming neutron flux are made. Such analysis has been performed at the Lawrence Berkeley National Laboratory (LBNL) by A. Hurst et al. [2], and the Berkeley group has expressed the strong desire to compile these data into EXFOR database and learn about compilations.

NNDC worked with Dr. Andrew Voyles+ (LBNL), produced EXFOR compilation and submitted the final version to the NDS, IAEA:

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*HISTORY (20190306C) A.S.Voyles, L.A.Bernstein, A.M.Hurst, B.Pritychenko*

This compilation was not processed by the NDS, IAEA, and we were asked to remove it from the transmission 1449 on June 17, 2019. NNDC was informed that our compilation cannot be included into EXFOR because of the NRDC 2014 decision on refereed publications for data that were not produced by original authors. This requirement was promptly communicated to Berkeley, and the Berkeley group produced a Nuclear Instruments and Methods publication on the Baghdad Atlas [3]. Therefore, we ask the permission of NRDC to include this work into EXFOR as the Area #1 entry 14521 because we followed all the required procedures. We have invested plenty of time and effort into this work, and these efforts should not be wasted. Entry #14521 is available as a complementary zip file.

In the meantime, we have learned that the Baghdad Atlas was added to EXFOR as entry 31816 in 2020. To accomplish this task, the Area#3 compiler simply downloaded the files from Berkeley website on January 23, 2020:

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*HISTORY (20200123T) On. Converted from A.Hurst's compilation*

*(CSV files) downloaded on 16 Jan. 2020 from*

*https://nucleardata.berkeley.edu/download.html.*

Here, I would like to reiterate that Baghdad data and their interpretation are not trivial. It involves very complex data and error analysis procedures that are described in detail in the entry 14521, and these details are missing from the entry 31816. In addition, multiple NRDC rules about contacting the authors and refereed publication requirements were ignored by the compiler, and these problems were not caught during the Area #3 transmission check. Therefore, it makes sense to remove incomplete entry #31816 as duplicate.

**References**

1. A.M. Demidov, L.I. Govor, Yu.K. Cherepantsev et al., *Atlas of Gamma-Ray Spectra from the Inelastic Scattering of Reactor Fast Neutrons*, Part I and II, Atomizdat, Moscow (1978).
2. A.M. Hurst, L.A. Bernstein, S.A. Chong, *Compilation of the “Atlas of Gamma-Rays from the inelastic scattering of Reactor Fast Neutrons” (1978DE41) by A.M. Demidov, L.I. Govor, Yu.K. Cherepantsev, M.R. Ahmed, S. Al-Najjar, M.A. Al-Amili, N. Al-Asafi, and N. Rammo*, Lawrence Berkeley National Laboratory Report LBNL-10072591 (2017).
3. A. M. Hurst, L.A. Bernstein, T. Kawano, A.M. Lewis, K. Song, *The Baghdad Atlas: A relational database of inelastic neutron scattering (n,n’g) data*, Nucl. Instr. Meth. **A 995**, 165095 (2021).

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