EFF-project

First phase (EFF-1) 1985-1988

NET emphasis on tritium breeding
+ n - multiplication


NET emphasis on shielding
data base
(+ Li, Be)


NET/ITER processing, benchmarking

user assistance

1992 approved (reduced programme)

1993 likely to be approved
<table>
<thead>
<tr>
<th>Material</th>
<th>EFF Evaluation</th>
<th>Agency</th>
<th>Other Evaluations</th>
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<tbody>
<tr>
<td>Li-7</td>
<td>NG</td>
<td>Birmingham, ECN</td>
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<td>Be-9</td>
<td>NG</td>
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<tr>
<td>Pb</td>
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<td>ENDF/B-VI</td>
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56 other materials selected from other eval.
EFF-2: Achieved

- Data file "distributed" for processing (ENEA Bologna)
- 9 "own" evaluations
  25 from JEF-2
  35 from other sources
  69 materials

- $^7\text{Li}$ Birmingham - ECN
  Angle-energy integrated mostly from ENDF/B-VI
  N-distributions added to file 6 pointwise lab. distr.
- $^9\text{Be}$ Birmingham - ECN
  idem, with MT51 to describe (n,2n) through excited state
Al, Si

ENEA-Bologna (G. Reffo)

Energy-angle integrated from JENDL-3

\( N \)-distributions:

Unified e\(^{-}\)/\( p \)reeq. model (IDA)

ang. distr. leading particle model, Kikuchi-Kawai

Scattering kernel

\( ^{52}\text{Cr}, ^{56}\text{Fe}, ^{50}\text{Ni}, ^{60}\text{Ni} \)

High-\( E \) range: M. Uhl

opt. model + unified e\(^{-}\)/\( p \)reeq. model Calc. (MAURINA)

+ DWBA

Formatting: ECN

All particle (+ recoil) distributions

for lumped quantity MT10 =

\( \text{radiation, particle emission} \)
Low-E range: Reich-Horve
Cr-52 ENEA-Bologna
Fe-56 KFK
Ni-58 ENDF/B-VI
Ni-60 CEA-Cad.

Cov. data: IRK

High-E range: MF33, MF34
+ table with SED (hot/cold)

Low-E range: MF33 (preliminary)

Pb

EFF-1 + update (n,2n)
1992 Programme
(Phase 1 of 3 years programme)

1. Updating, file management, feedback from benchmarking, corrections in EFF-2

2. Processing tools improvements
   Be-g, Kalbach, GROUPXS, etc.

3. Processing EFF-2,

4. Analysis: Shielding benchmarks (existing benchmarks)

5. Cross sections in high-energy range (Mo update)

6. Bulk shield experiments (SS block)

N.B. Phase 2: defined 1993-1994 funding to be approved
EAF - Project

- EAF-1  Distr. Sept. '89
  European Activation File
  for fusion reactor applications
  based upon REAC-ECN-5

- EAF-2  Distr. Early 1991
  ECN-C-91-073 (July 1991)
  Rather complete,
  except for (n,f), actinide
  targets

- EAF-3  Distr. May 1992
  Incl. (n,f) reactions
  Actinide targets
  Extended report in press.
  (Also paper at F.P. meeting,
  JAERI)
Associated code + libraries:

- **FISPACT** developed at AEA-Harwell
  - Decay data + spectra
  - Q-values
  - Risk data (Sv/IBq)
  - EAF-3 \( \leq \) point wise
    - 100 groups GAN-2
    - 15 groups, VITAMIN J E C

  Module to condense to 1 group

\[ \rightarrow \text{EASY SYSTEM} \]

Also included:

* Uncertainties (1 group)
* \( A(n,x)B(x,y)C \) data (Kf/K)
Future development EAF

Period 1992-1994: programme defined + sponsored

* Improvement of quality
* More groups for uncertainty
calculations
* Use for other applications
e.g. transmutation