**LOADING DIAGRAMS
OF EXPERIMENTAL SUBASSEMBLIES
STARTING IRRADIATION IN EBR-II RUNS 63-76**

Compiled by J. C. Case and W. J. Larson

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**EBR-II PROJECT
ARGONNE NATIONAL LABORATORY
Argonne, Illinois - Idaho Falls, Idaho**

February 1975

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LOADING DIAGRAMS OF EXPERIMENTAL SUBASSEMBLIES
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INTRODUCTION

This report contains the loading diagrams for all experimental subassemblies as they were fabricated for irradiation starting in EBR-II runs 63 through 76. It supplements three similar reports: ANL/EBR-015, for runs 5 through 42; ANL/EBR-043, for runs 43 through 50; and ANL/EBR-074, for runs 51 through 62. Each diagram, with its accompanying table, gives the location, identification number, and content of each capsule (or element) in the subassembly. The arrow on each diagram shows the direction to the EBR-II core center at the time of the initial loading of the subassembly into the reactor grid. (Directions to the core center after any subsequent relocations are not shown.) Information with each diagram gives the type of hardware, orifice size, results of flow-testing of the fabricated assembly (where applicable), date and place* of assembly, and date placed into the reactor. (All dimensions are in inches.)

*HFEF designates the Hot Fuel Examination Facility, FASB the Fuel Assembly and Storage Building, and ANL-East the Illinois ANL site.

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Position	Sponsor	Ident. No.	Comments
1	HEDL	P-4	Dummy
2		PNL-3-31	
3		PNL-3-10	
4		P-6	Dummy
5		PNL-3-50	
6		PNL-3-29	
7		PNL-3-6	
8		PNL-3-11	
9		PNL-3-13	
10		PNL-3-22	
11		PNL-3-51	
12		PNL-3-30	
13		PNL-3-7	
14		PNL-3-12	
15		PNL-3-18	
16		P-2	Dummy
17		PNL-3-71	
18		PNL-3-25	
19		PNL-3-37	
20		PNL-3-28	
21		PNL-3-19	
22		P-5	Dummy
23		PNL-3-21	
24		PNL-3-24	
25		PNL-3-36	
26		PNL-3-3	
27		PNL-3-5	
28		PNL-3-17	
29		PNL-3-32	
30		PNL-3-34	
31		PNL-3-1	
32		PNL-3-4	
33		PNL-3-9	
34		P-1	Dummy
35		PNL-3-35	
36		PNL-3-2	
37		P-3	Dummy

Subassembly No. X051B

Type Hardware: MK-F-37B

See
Orifice: No. of Holes Note 1; Dia. of Holes See Note 1

Lower Adapter: EB-1-50448-D

Flow Test Data: ~33 gpm in row 4 @ 38.5 psi

Date Assembled: 5/10/73; Location HFEF

Date Loaded in Reactor: 5/23/73; for Run 63

Initial Grid Position: 4C3

Notes:

1. Bonnet-type orifice per EB-1-51975-B, with one 0.652" hole in transverse plate and two 0.461" holes in bonnet, 180° apart.

2. All pins, except 6 dummies, continue from X051A.
3. UO_2 -25 wt % PuO_2 fuel; natural uranium.

Position	Sponsor	Ident. No.	Comments
1	HEDL	P-9	Dummy
2		PNL-4-21	
3		PNL-4-27	
4		P-10	Dummy
5		PNL-4-22	
6		PNL-4-23	
7		PNL-4-28	
8		-29	
9		-30	
10		-2	
11		-24	
12		-25	
13		-31	
14		-32	
15		-33	
16		P-8	Dummy
17		PNL-4-3	
18		-4	
19		-5	
20		-36	
21		-35	
22		P-11	Dummy
23		PNL-4-6	
24		-7	
25		-13	
26		-8	
27		-9	
28		-37	
29		-10	
30		-15	
31		-16	
32		-17	
33		-11	
34		P-7	Dummy
35		PNL-4-18	
36		PNL-4-19	
37		P-12	Dummy

Subassembly No. X059B

Type Hardware: MK-F-37B

Orifice: No. of Holes 7; Dia. of Holes 0.235

Lower Adapter: EB-1-50552

Flow Test Data: 49 gpm in row 7 @ 45.3 psi

Date Assembled: 8/7/73; Location HFEF

Date Loaded in Reactor: 8/18/73; for Run 65

Initial Grid Position: 7A5

Note:

All elements contain UO_2 -25 wt % PuO_2 ; uranium 45% enriched.

Position	Spcnsor	Ident. No.	Comments
1	GE	F9B-8	
2		F9B-22	
3		F9B-1	
4		F9B-20	
5		F9B-24	
6		F9B-31	
7		F9B-32	
8		F9B-30	
9		F9B-5	
10		F9A-12	
11		F9B-23	
12		F9B-33	
13		F9B-34	
14		F9B-35	
15		F9B-25	
16		F9B-17	
17		F9B-14	
18		F9B-3	
19		F9B-29	
20		F9B-37	
21		F9B-36	
22		F9B-4	
23		F9B-19	
24		F9B-28	
25		F9B-11	
26		F9B-7	
27		F9B-27	
28		F9B-10	
29		F9B-2	
30		F9B-16	
31		F9B-26	
32		F9B-18	
33		F9B-9	
34		F9C-28	
35		F9B-6	
36		F9B-13	
37		F9B-15	

Subassembly No. X062A

Type Hardware: MK-F-37B

Orifice: No. of Holes 7; Dia. of Holes 0.292

Lower Adapter: EB-1-50552

Flow Test Data: 59 gpm in row 7 @ 45.3 psi

Date Assembled: 3/23/73; Location HFEF

Date Loaded in Reactor: 3/28/73; for Run 63

Initial Grid Position: 7F2

Note:

All elements contain UO_2 -25 wt % PuO_2 ; uranium 93% enriched.

Position	Sponsor	Ident. No.	Comments
1	ANL	P21	Structural
2		P32	
3		P36	
4		P41	
5		P30	
6		P34	
7		P2	
8		Dummy	
9	ANL	P44	Structural
10	ANL	P19	Structural
11		Dummy	
12	ANL	P38	Structural
13		P49	
14		P57	
15		P39	
16		P48	
17		P29	
18		P40	
19		P7	

Subassembly No. X065I

Type Hardware: MK-T-19

Orifice: No. of Holes 3; Dia. of Holes 0.162

Lower Adapter: EB-1-50552-D

Flow Test Data: ~ 7 gpm in row 7

Date Assembled: 3/2/73; Location HFEF

Date Loaded in Reactor: 3/29/73; for Run 62E

Initial Grid Position: 7F5

Position	Sponsor	Ident. No.	Comments
1	ANL	P36	Structural
2		P32	
3		P21	
4		P2	
5		P34	
6		P30	
7		P41	
8	↓	P38	↓
9		Dummy	
10	ANL	P19	Structural
11	ANL	P44	Structural
12		Dummy	
13	ANL	P48	Structural
14		P39	
15		P57	
16		P49	
17		P7	
18		P40	
19	↓	P29	↓

Subassembly No. X065J

Type Hardware: MK-T-19

Orifice: No. of Holes 3; Dia. of Holes 0.162

Lower Adapter: EB-1-50552-D

Flow Test Data: ~ 17 gpm in row 7

Date Assembled: 12/7/73; Location HFEF

Date Loaded in Reactor: 12/15/73; for Run 68A

Initial Grid Position: 7E3

Position	Sponsor	Ident. No.	Comments
1	ANL	P36	Structural
2		P32	
3		P21	
4		P2	
5		F34	
6		F30	
7		F41	
8	↓	P38	↓
9		Dummy	
10	ANL	P19	Structural
11	ANL	P44	Structural
12		Dummy	
13	ANL	P48	Structural
14		P39	
15		P57	
16		P49	
17		P7	
18		P40	
19	↓	P29	↓

Subassembly No. X065K

Type Hardware: MK-T-19

Orifice: No. of Holes 3; Dia. of Holes 0.162

Lower Adapter: EB-1-50552-D

Flow Test Data: ~ 17 gpm in row 7

Date Assembled: 5/17/74; Location HFEF

Date Loaded in Reactor: 6/2/74; for Run 71A

Initial Grid Position: 7E3

Position	Sponsor	Ident. No.	Comments
1	ANL	P-36	Structural
2		P-32	
3		P-21	
4		P-2	
5		P-34	
6		P-30	
7		P-41	
8		P-38	
9		EA-150	
10		P-19	
11	↓	P-44	↓
12		Dummy	
13	ANL	P-48	Structural
14		P-39	
15		P-57	
16		P-49	
17		P-7	
18		P-40	
19	↓	P-29	↓

Subassembly No. X065L

Type Hardware: MK-T-19

Orifice: No. of Holes 3; Dia. of Holes 0.162

Lower Adapter: EB-1-50552-D

Flow Test Data: ~ 17 gpm in row 7

Date Assembled: 11/18/74; Location HFEF

Date Loaded in Reactor: 12/8/74; for Run 75A

Initial Grid Position: 7E3

Position	Sponsor	Ident. No.	Comments
1	HEDL	7-1	
2		7-2	
3		7-3	
4		7-4	
5		7-5	
6		7-6	
7		7-7	
8		7-42	Unirradiated
9		7-9	
10		7-39	
11		7-11	
12		7-12	
13		7-13	
14		7-14	
15		7-15	
16		7-16	
17		7-17	
18		7-18	
19		7-19	
20		7-20	
21		7-21	
22		7-42	Unirradiated
23		7-23	
24		7-24	
25		7-43	Unirradiated
26		7-26	
27		7-27	
28		7-28	
29		7-29	
30		7-30	
31		7-31	
32		7-32	
33		7-33	
34		7-34	
35		7-35	
36		7-36	
37		7-37	

Subassembly No. X069B (PNL-7)

Type Hardware: MK-H-37B

Orifice: No orifice used

Lower Adapter: EB-1-50552

Flow Test Data: 58 gpm in row 6 @ 45 psi

Date Assembled: 5/10/73; Location HFEF

Date Loaded in Reactor: 5/14/73; for Run 63

Initial Grid Position: 6D4

Note:

All elements contain UO_2 -25 wt % PuO_2 ; uranium 45% enriched.

Position	Sponsor	Ident. No.	Comments
1	ANL	208	
2		E-17	
3		256	
4		270	
5		E-15	
6		232	
7		231	
8		200	
9		287	
10		235	
11		E-1	
12		253	
13		284	
14		202	
15		276	
16		265	
17		264	
18		E-16	
19		224	
20		E-6	
21		223	
22		274	
23		260	
24		E-12	
25		257	
26		275	
27		E-7	
28		269	
29		233	
30		267	
31		E-10	
32		282	
33		E-3	
34		288	
35		209	
36		226	
37		277	

Subassembly No. X071E

Type Hardware: MK-B-37

Orifice: No. of Holes 7; Dia. of Holes 0.250

Lower Adapter: EB-1-50552-D

Flow Test Data: ~50 gpm in row 6

Date Assembled: 4/18/73; Location HFEF

Date Loaded in Reactor: 5/14/73; for Run 63

Initial Grid Position: 6B1

Note:

All capsules contain MK-II driver fuel previously irradiated in X071D.

Position	Sponsor	Ident. No.	Comments
1	ANL	258	From X071
2		235	
3		E-15	
4		208	
5		260	
6		264	
7		E-1	
8		232	
9		E-17	
10		233	
11		E-12	
12		E-16	
13		253	
14		231	
15		256	
16		288	
17		285	New
18		257	
19		224	
20		284	
21		204	New
22		270	
23		216	New
24		E-11-2	New
25		275	
26		E-6	
27		202	
28		287	
29		226	
30		282	
31		E-7	
32		223	
33		276	
34		277	
35		E-3	
36		269	
37		274	

Subassembly No. X071F

Type Hardware: MK-B-37

Orifice: No. of Holes 7; Dia. of Holes 0.250

Lower Adapter: EB-1-50552-D

Flow Test Data: ~50 gpm in row 6

Date Assembled: 11/1/73; Location HFEF

Date Loaded in Reactor: 11/12/73; for Run 67

Initial Grid Position: 6C1

Note:

All capsules contain MK-II driver fuel; unless otherwise noted, all continue from X071E.

Position	Sponsor	Ident. No.	Comments
1	ANL	258	
2		235	
3		E-15	
4		208	
5		260	
6		264	
7		E-1	
8		232	
9		E-17	
10		233	
11		E-12	
12		E-16	
13		253	
14		231	
15		256	
16		288	
17		285	
18		257	
19		224	
20		284	
21		204	
22		270	
23		216	
24		E-10	From X071E
25		275	
26		E-6	
27		217	New
28		287	
29		226	
30		282	
31		E-7	
32		223	
33		276	
34		277	
35		E-3	
36		269	
37		274	

Subassembly No. X071G

Type Hardware: MK-B-37

Orifice: No. of Holes 7; Dia. of Holes 0.250

Lower Adapter: EB-1-50552-D

Flow Test Data: ~50 gpm in row 6

Date Assembled: 1/24/74; Location HFEF

Date Loaded in Reactor: 1/29/74; for Run 69A

Initial Grid Position: 6C1

Note:

All capsules contain MK-II driver fuel; unless otherwise noted, all continue from X071F.

Position	Sponsor	Ident. No.	Comments
1	ANL	258	
2		235	
3		E-15	
4		208	
5		260	
6		271	New
7		E-1	
8		232	
9		E-17	
10		233	
11		E-12	
12		E-11-2	From X071F
13		253	
14		231	
15		256	
16		288	
17		285	
18		257	
19		224	
20		281	New
21		204	
22		270	
23		216	
24		E-10	
25		280	New
26		E-6	
27		217	
28		287	
29		226	
30		282	
31		E-7	
32		222	New
33		276	
34		277	
35		E-3	
36		269	
37		274	

Subassembly No. X071H

Type Hardware: MK-B-37

Orifice: No. of Holes 7; Dia. of Holes 0.250

Lower Adapter: EB-1-50552-D

Flow Test Data: ~50 gpm in row 6

Date Assembled: 5/15/74; Location HFEF

Date Loaded in Reactor: 5/29/74; for Run 71A

Initial Grid Position: 6C1

Note:

All capsules contain MK-II driver fuel; unless otherwise noted, all continue from X071G.

Position	Sponsor	Ident. No.	Comments
1	WARD	W2-16	93%
2		W2-5	
3		W2-12	93%
4		W2-9	
5		W2-2	
6		W2-19	93%
7		W2-18	93%
8		W2-15	93%
9		W5-8	
10		W5-10	
11		W2-4	
12		W2-10	
13		W5-9	
14		W5-14	
15		W2-11	
16		W2-3	
17		W5-11	
18		W5-12	
19		W5-13A	

Subassembly No. X076A

Type Hardware: MK-A-19A

See
Orifice: No. of Holes Note 1

Lower Adapter: EB-1-50552-D

Flow Test Data: ~14.7 gpm in row 7 @ 45.3 psi

Date Assembled: 11/2/73; Location HFEF

Date Loaded in Reactor: 11/11/73; for Run 67A

Initial Grid Position: 7F1

Notes:

1. Bonnet-type orifice with one 0.360" hole in plate and two 0.253" radial holes.

2. Capsules are of the vent-tube design; overall length ~42".
3. All capsules contain UO_2 -25 wt % PuO_2 ; unless otherwise noted, enrichment is 93% in W5 capsules, 65% in W2. W5 capsules new, others continue from X076.

Position	Sponsor	Ident. No.	Comments
1	WARD	W5-6	
2		W5-3	
3		W1-19	
4		W1-6	
5		W1-8	
6		W5-4	
7		W1-4	
8		W5-2	
9		W1-17	
10		W1-2	
11		W5-1	
12		W1-10	
13		W5-5	
14		W1-5	
15		W1-18	
16		W5-6A	
17		W5-7	
18		W1-3	
19	Y	W1-13	

Subassembly No. X088A

Type Hardware: MK-A-19A

See

Orifice: No. of Holes Note 1

Lower Adapter: EB-1-50552-D

Flow Test Data: ~14.7 gpm in row 7 @ 45.3 psi

Date Assembled: 11/7/73; Location HFEF

Date Loaded in Reactor: 11/30/73; for Run 67B

Initial Grid Position: 7F6

Notes:

1. Bonnet-type orifice with one 0.360" hole in plate and two 0.253" radial holes in the bonnet.

2. Capsules are of the vent-tube design; overall length ~42".
3. All capsules contain UO_2 -25 wt % PuO_2 ; enrichment is 93% in W5 capsules, 43% in W1. W5 capsules new, others continue from X088.

Position	Sponsor	Ident. No.	Comments
1	GGA	G-13	New
2	GGA	G-11	New
3	GGA	G-8	From X094A
4	GGA	G-10	New
5	GGA	G-4	From X094A
6	GGA	G-9	New
7	GGA	G-12	New

Notes:

1. Bonnet-type orifice with one 0.440" hole in plate and two 0.311" radial holes in the bonnet.
2. All capsules contain UO_2 -15 wt % PuO_2 ; uranium 93% enriched.
3. Short arrows show orientation of arrow on top end plug of capsule.

Subassembly No. X094B

Type Hardware: MK-B-7B

See

Orifice: No. of Holes Note 1

Lower Adapter: EB-1-50552-D

Flow Test Data: ~18 gpm in row 7 @ 45.3 psi

Date Assembled: 10/4/73; Location HFEF

Date Loaded in Reactor: 11/12/73; for Run 67A

Initial Grid Position: 7B6

Position	Sponsor	Ident. No.	Comments
1	GE	LP2S	Structural
2		LP4B	
3		LP2H	
4		LP2R	
5		LP4A	
6		LP2G	
7		LP2C	
8		LP2P	
9		LP2O	
10		LP2M	
11		LP2D	
12		LP2A	
13		LP2DA	
14		LP2CA	
15		LP2E	
16		LP2AA	
17		LP2I	
18		LP2K	
19	↓	LP2BA	↓

Subassembly No. X098B

Type Hardware: MK-A-13A

Orifice: No. of Holes 1 2; Dia. of Holes 0.318
(in series) 0.229

Lower Adapter: EB-1-50448-D

Flow Test Data: ~ 12 gpm in row 4

Date Assembled: 5/24/74; Location HFEF

Date Loaded in Reactor: 6/2/74; for Run 71A

Initial Grid Position: 4A3

Position	Sponsor	Ident. No.	Comments
1	ANL	EAT2	Structural
2		EA83	
3		EA69	
4		EAT5	
5		EA79	
6		EA49	
7		EAT6	
8		EAT02	
9		EA41	
10		EAT00	
11		EA23	
12		EA322	
13		EA45	
14		EA9	
15		EA945	
16		EA2	
17		EA75	
18		EA48	
19		EA30	
20		EA86	
21		EA74	
22		EA79	
23		EA98	
24		EA5	
25		EA943	
26		EAT01	
27		EAT8	
28		EA601	
29		EA72	
30		EA62	
31		EA27	
32		EA65	
33		EA76	
34		EA25	
35		EAT03	
36		EAT06	
37		EA21	

Subassembly No. X101D

Type Hardware: MK-L-37A

Orifice: No. of Holes 3; Dia. of Holes 0.162

Lower Adapter: EB-1-50552-D

Flow Test Data: ~ 14 gpm in row 7

Date Assembled: 3/26/73; Location HFEF

Date Loaded in Reactor: 3/29/73; for Run 62E

Initial Grid Position: 7D5

Position	Sponsor	Ident. No.	Comments
1	ANL	EA12	Structural
2		EA83	
3		EA69	
4		EA15	
5		EA79	
6		EA49	
7		EA16	
8		EA102	
9		EA41	
10		EA100	
11		EA23	
12		EA322	
13		EA45	
14		EA9	
15		EA945	
16		EA2	
17		EA75	
18		EA48	
19		EA30	
20		EA86	
21		EA74	
22		EA29	
23		EA98	
24		EA5	
25		EA943	
26		EA101	
27		EA18	
28		EA601	
29		EA72	
30		EA62	
31		EA27	
32		EA65	
33		EA76	
34		EA25	
35		EAT03	
36		EAT06	
37		EA21	

Subassembly No. X101E

Type Hardware: MK-L-37A

Orifice: No. of Holes 3; Dia. of Holes 0.162

Lower Adapter: EB-1-50552-D

Flow Test Data: ~ 14 gpm in row 7

Date Assembled: 11/6/73; Location HFEF

Date Loaded in Reactor: 12/15/73; for Run 68A

Initial Grid Position: 7D5

Position	Sponsor	Ident. No.	Comments
1	ANL	EA12	Structural
2		EA83	
3		EA69	
4		EA15	
5		EA79	
6		EA49	
7		EA16	
8		EA102	
9		EA41	
10		EA100	
11		EA23	
12		EA322	
13		EA45	
14		EA9	
15		EA945	
16		EA2	
17		EA75	
18		EA48	
19		EA30	
20		EA86	
21		EA74	
22		EA29	
23		EA98	
24		EA5	
25		EA943	
26		EA101	
27		EA18	
28		EA601	
29		EA72	
30		EA62	
31		EA27	
32		EA65	
33		EA76	
34		EA25	
35		EA103	
36		EA106	
37		EA21	

Subassembly No. X101F

Type Hardware: MK-L-37A

Orifice: No. of Holes 3; Dia. of Holes 0.162

Lower Adapter: EB-1-50552-D

Flow Test Data: ~ 14 gpm in row 7

Date Assembled: 5/21/74; Location HFEF

Date Loaded in Reactor: 6/2/74; for Run 71A

Initial Grid Position: 7D5

Position	Spcnsor	Ident. No.	Comments
1	ANL	EA12	Structura
2		EA83	
3		EA69	
4		EA15	
5		EA79	
6		EA49	
7		EA16	
8		EA102	
9		EA41	
10		EA100	
11		EA23	
12		EA322	
13		EA45	
14		EA9	
15		EA945	
16		EA2	
17		EA75	
18		EA48	
19		EA30	
20		EA86	
21		EA74	
22		EA29	
23		EA98	
24		EA5	
25		EA943	
26		EA154	
27		EA18	
28		EA601	
29		EA72	
30		EA62	
31		EA27	
32		EA65	
33		EA76	
34		EA25	
35		EA103	
36		EA106	
37		EA21	

Subassembly No. X1016

Type Hardware: MK-L-37A

Orifice: No. of Holes 3; Dia. of Holes 0.162

Lower Adapter: EB-1-50552-D

Flow Test Data: ~ 14 gpm in row 7

Date Assembled: 11/15/74; Location HFEF

Date Loaded in Reactor: 12/8/74; for Run 75A

Initial Grid Position: 7D5

Position	Sponsor	Ident. No.	Comments
1	ANC	I-15-11	Structural
2		I-15-9	
3		I-15-7	
4		I-15-12	
5		I-15-10	
6		I-15-8	
7		I-15-6	

Subassembly No. X110A

Type Hardware: MK-B-7A

Orifice: No. of Holes 3; Dia. of Holes 0.162

Lower Adapter: EB-1-50552-D

Flow Test Data: ~ 13 gpm in row 7

Date Assembled: 2/17/72; Location HFEF

Date Loaded in Reactor: 3/4/72; for Run 55A

Initial Grid Position: 7C5

Position	Sponsor	Ident. No.	Comments
1	ANL	OS-9	
2		D-51	Unirradiated
3		D-22	
4		OS-13	
5		OS-4	
6		OP-1	
7		OS-6	
8		OS-1	
9		D-14	
10		OP-7	
11		OS-12	
12		OS-2	
13		D-17	
14		OS-3	
15		OP-2	
16		D-2	
17		OP-4	Unirradiated
18		D-10	
19		OS-7	
20		D-18	
21		D-41	Unirradiated
22		D-5	
23		D-38	Unirradiated
24		D-25	
25		D-31	
26		D-30	
27		OS-5	
28		OP-6	
29		OP-3	
30		D-21	
31		D-12	
32		D-4	
33		D-29	
34		OS-11	
35		OS-10	
36		D-53	Unirradiated
37		D-42	Unirradiated

Subassembly No. X-12A

Type Hardware: MK-N-37

Orifice: No. of Holes 7; Dia. of Holes 0.235

Lower Adapter: EB-1-50552

Flow Test Data: ~ 49 gpm in row 7 @ 45.3 psi

Date Assembled: 10/18/73; Location HFEF

Date Loaded in Reactor: 11/12/73; for Run 67A

Initial Grid Position: 7D4

Note:

All elements contain UO_2 -20 wt % PuO_2 ; uranium 91% enriched.

Position	Sponsor	Ident. No.	Comments
1	HEDL	PNL-5-60	
2		PNL-5-50	
3		PNL-5-30	
4		PNL-5-24	
5		PNL-5-29	
6		PNL-5-37	
7		PNL-5-61	
8		P5X-7	
9		PNL-5-70	
10		PNL-5-8	
11		PNL-5-36	
12		P5X-8	Unirradiated
13		PNL-5-12	
14		P5X-12	
15		P5X-9	Unirradiated
16		PNL-5-4	
17		PNL-5-13	
18		PNL-5-17	
19	Y	P5X-13	

Subassembly No. X116B (PNL-5)

Type Hardware: MK-E-19D

Orifice: No. of Holes 7; Dia. of Holes 0.250

Lower Adapter: EB-1-50552

Flow Test Data: ~ 43 gpm in row 6 @ 45.3 psi

Date Assembled: 5/11/73; Location HFEF

Date Loaded in Reactor: 5/14/73; for Run 63

Initial Grid Position: 6A1

Note:

All elements contain UO_2 -25 wt % PuO_2 ; uranium 93% enriched.

Position	Sponsor	Ident. No.	Comments
1		Dummy	
2		Dummy	
3		"	
4		"	
5		"	
6		"	
7		"	
8		"	
9	GE	F8B-10	
10	GE	F8B-11	
11		Dummy	
12		Dummy	
13	GE	F8B-4	
14	GE	F8B-13	
15	GE	F8B-15	
16		Dummy	
17		Dummy	
18	GE	F8B-14	
19		Dummy	

Subassembly No. X117B

Type Hardware: MK-A-19A

Orifice: No orifice used

Lower Adapter: EB-1-50533

Flow Test Data: ~ 21 gpm in row 9 @ 9.3 psi

Date Assembled: 3/19/73; Location HFEF

Date Loaded in Reactor: 5/13/73; for Run 63

Initial Grid Position: 9C8

Note:

All capsules contain UO_2 -25 wt % PuO_2 fuel; uranium 93% enriched.

Position	Sponsor	Ident. No.	Comments
1		Dummy	
2		Dummy	
3		"	
4		"	
5		"	
6		"	
7		"	
8		"	
9		"	
10		"	
11		"	
12		"	
13	GE	F8B-8	
14	GE	F8B-6	
15	GE	F8B-2	
16	GE	F8B-1	
17	GE	F8B-17	
18	GE	F8B-18	
19	GE	F8B-19	

Subassembly No. X118A
 Type Hardware: MK-A-19
 Orifice: No. of Holes 1 Dia. of Holes 0.750
 Lower Adapter: EB-1-38615
 Flow Test Data: ~ 20 gpm in row 9 @ 9.3 psi
 Date Assembled: 3/9/73 ; Location HFEF
 Date Loaded in Reactor: 5/14/73 ; for Run 63
 Initial Grid Position: 9C1

Note:

All capsules contain UO_2 -25 wt % PuO_2 fuel;
uranium 93% enriched.

Position	Sponsor	Ident. No.	Comments
1	ANL	EA4	Structural
2		EA53	
3		EA43	
4		EA20	
5		EA93	
6		EA104	
7		EA26	
8		EA94	
9		EA52	
10		EA59	
11		EA7	
12		EA57	
13		EA87	
14		EA6	
15		EA58	
16		EA88	
17		EA47	
18		EA67	
19		EA107	
20		EA55	
21		EA81	
22		EA35	
23		EA40	
24		EA32	
25		EA99	
26		EA105	
27		EA24	
28		EA44	
29		EA60	
30		EA78	
31		EA19	
32		EA54	
33		EA37	
34		EA85	
35		EA89	
36		EA46	
37		EA14	

Subassembly No. X133D

Type Hardware: MK-I-37A

Orifice: No. of Holes 3; Dia. of Holes 0.162

Lower Adapter: EB-1-50552-D

Flow Test Data: ~ 13 gpm in row 7

Date Assembled: 5/3/73; Location HFEF

Date Loaded in Reactor: 5/15/73; for Run 63

Initial Grid Position: 7B5

Position	Sponsor	Ident. No.	Comments
1	ANL	EA88	Structural
2		EA59	
3		EA93	
4		EA4	
5		EA40	
6		EA47	
7		EA7	
8		EA104	
9		EA53	
10		EA60	
11		EA32	
12		EA67	
13		EA57	
14		EA26	
15		EA43	
16		EA85	
17		EA78	
18		EA99	
19		EA107	
20		EA87	
21		EA94	
22		EA20	
23		EA89	
24		EA19	
25		EA105	
26		EA55	
27		EA6	
28		EA52	
29		EA46	
30		EA54	
31		EA24	
32		EA81	
33		EA58	
34		EA14	
35		EA37	
36		EA44	
37		EA35	

Subassembly No. X133E

Type Hardware: MK-L-37A

Orifice: No. of Holes 3; Dia. of Holes 0.162

Lower Adapter: EB-1-50552-D

Flow Test Data: ~ 13 gpm in row 7

Date Assembled: 12/5/73; Location HFEF

Date Loaded in Reactor: 12/15/73; for Run 68A

Initial Grid Position: 7F4

Position	Sponsor	Ident. No.	Comments
1	ANL	EA88	Structural
2		EA59	
3		EA93	
4		EA4	
5		EA40	
6		EA47	
7		EA7	
8		EA104	
9		EA53	
10		EA60	
11		EA32	
12		EA67	
13		EA57	
14		EA26	
15		EA43	
16		EA85	
17		EA78	
18		EA99	
19		EA107	
20		EA87	
21		EA94	
22		EA20	
23		EA89	
24		EA19	
25		EA105	
26		EA55	
27		EA6	
28		EA52	
29		EA46	
30		EA54	
31		EA24	
32		EA81	
33		EA58	
34		EA14	
35		EA37	
36		EA44	
37		EA35	

Subassembly No. X133F

Type Hardware: MK-L-37A

Orifice: No. of Holes 3; Dia. of Holes 0.162

Lower Adapter: EB-1-50552-D

Flow Test Data: ~13 gpm in row 7

Date Assembled: 5/22/74; Location HFEF

Date Loaded in Reactor: 6/2/74; for Run 71A

Initial Grid Position: 7F4

Position	Sponsor	Ident. No.	Comments
1	ANL	EA88	Structural
2		EA59	
3		EA93	
4		EA4	
5		EA40	
6		EA47	
7		EA7	
8		EA104	
9		EA53	
10		EA60	
11		EA32	
12		EA67	
13		EA57	
14		EA26	
15		EA43	
16		EA85	
17		EA78	
18		EA99	
19		EA107	
20		EA87	
21		EA94	
22		EA20	
23		EA89	
24		EA19	
25		EA105	
26		EA55	
27		EA6	
28		EA52	
29		EA46	
30		EA54	
31		EA24	
32		EA81	
33		EA58	
34		EA14	
35		EA37	
36		EA44	
37		EA35	

Subassembly No. X133G

Type Hardware: MK-L-37A

Orifice: No. of Holes 3; Dia. of Holes 0.162

Lower Adapter: EB-1-50552-D

Flow Test Data: ~13 gpm in row 7

Date Assembled: 11/25/74; Location HFEF

Date Loaded in Reactor: 12/7/74; for Run 75A

Initial Grid Position: 7F4

Position	Sponsor	Ident. No.	Comments
1	HEDL	P23A-1	
2		-2	
3		-3	
4		-4	
5		-5	
6		-6	
7		-7	
8		-8	
9		-9	
10		-10	
11		-11	
12		-64H	Unirradiated
13		-13	
14		-14	
15		-15	
16		-16	
17		-17	
18		-18	
19		-43	
20		-20	
21		-45	Unirradiated
22		-22	
23		-23	
24		-24	
25		-50	Unirradiated
26		-12	
27		-38	
28		-53	
29		-29	
30		-41	Unirradiated
31		-44	
32		-19	
33		-33	
34		-34	
35		-49	
36		-36	
37		-37	

Subassembly No. X13EC

Type Hardware: MK-C-37B

Orifice: No. of Holes 7; Dia. of Holes 0.235

Lower Adapter: EB-1-50448

Flow Test Data: ~55 gpm in row 3 @ 43.0

Date Assembled: 11/12/74; Location HFEF

Date Loaded in Reactor: 12/7/74; for Run 75

Initial Grid Position: 3E2

Notes:

1. Upper orifice plate per EB-1-50778 with seven 0.219" holes.
2. Shield per EB-1-50779 with six 0.281" holes.

3. All elements contain UO_2 -25 wt % PuO_2 fuel; uranium 65% enriched.

Position	Sponsor	Ident. No.	Comments
1	ANL	EA112	Structural
2		EA222	
3		EA97	
4		EA141	
5		EA224	
6		EA56	
7		EA131	
8		EA223	
9		EA228	
10		EA73	
11		EA113	
12		EA153	
13		EA38	
14		EA110	
15		EA226	
16		EA114	
17		EA120	
18		EA147	
19		EA121	
20		EA95	
21		EA84	
22		EA111	
23		EA148	
24		EA115	
25		EA96	
26		EA70	
27		EA118	
28		EA92	
29		EA229	
30		EA225	
31		EA116	
32		EA63	
33		EA227	
34		EA119	
35		EA64	
36		EA68	
37		EA117	

Subassembly No. X147A

Type Hardware: MK-L-37A

Orifice: No. of Holes 2; Dia. of Holes 0.063
(in each of three plates in series)

Lower Adapter: EB-1-50552-D

Flow Test Data: ~0.72 gpm in row 7

Date Assembled: 5/2/73; Location HFEF

Date Loaded in Reactor: 5/15/73; for Run 63

Initial Grid Position: 7F4

Position	Sponsor	Ident. No.	Comments
1	ANL	EA111	Structural
2		EA92	
3		EA227	
4		EA117	
5		EA226	
6		EA84	
7		EA118	
8		EA63	
9		EA68	
10		EA228	
11		EA110	
12		EA95	
13		EA70	
14		EA116	
15		EA64	
16		EA141	
17		EA223	
18		EA38	
19		EA121	
20		EA96	
21		EA225	
22		EA119	
23		EA97	
24		EA131	
25		EA155	
26		EA147	
27		EA115	
28		EA229	
29		EA222	
30		EA56	
31		EA113	
32		EA120	
33		EA148	
34		EA112	
35		EA224	
36		EA73	
37		EA114	

Subassembly No. X1478

Type Hardware: MK-L-37A

Orifice: No. of Holes 2; Dia. of Holes 0.063
(in each of three plates in series)

Lower Adapter: EB-1-50552-D

Flow Test Data: ~0.72 gpm in row 7

Date Assembled: 8/2/74; Location HFEF

Date Loaded in Reactor: 8/13/74; for Run 73

Initial Grid Position: 7A3

Pos.	Sponsor	Ident. No.	Pos.	Sponsor	Ident. No.
1	ANL	EV-1	32	ANL	EV-25
2		EV-2	33		EV-26
3		EV-3	34		EV-27
4		EV-4	35		EV-28
5		EV-5	36		EV-29
6		EV-6	37		EV-30
7		EV-7	38		EV-31
8		EW-55	39		EV-32
9		EV-8	40		34578
10		EW-57	41		EV-33
11		EV-9	42		EW-64
12		EV-10	43		EV-34
13		EW-53	44		EV-35
14		EV-11	45		EW-60
15		EV-12	46		EV-36
16		EV-13	47		EV-37
17		EV-14	48		EV-38
18		EV-15	49		EV-39
19		EV-16	50		EV-40
20		EV-17	51		EV-41
21		EV-18	52		EV-42
22		EV-19	53		EW-61
23		EW-67	54		EV-43
24		EV-20	55		EW-63
25		EW-58	56		EV-44
26		EV-21	57		EV-45
27		EV-22	58		EV-46
28		EW-59	59		EV-47
29		EV-23	60		EV-48
30		EW-65	61		EV-49
31		EV-24			

Subassembly No. X149A

Type Hardware: MK-E-61A

Orifice: No. of Holes 2; Dia. of Holes 0.703
(in series) 0.500

Lower Adapter: EB-1-50552

Flow Test Data: 39 gpm in row 7 @ 45 psi

Date Assembled: 1/14/74; Location HFEF

Date Loaded in Reactor: 1/15/75; for Run 69A

Initial Grid Position: 7A6

Note:

All elements contain MK-IA driver fuel; all except 34578 (Pos. 40) continue from X149. EW series have partial bonds.

Position	Sponsor	Ident. No.	Comments
1	HEDL	P12A-82D	
2		-69KR	
3		-61HR	
4		-49GRR	
5		-75E	
6		-24C	
7		-14B	
8		-6AR	
9		-68KR	
10		-76F	
11		-2A	
12		-1A	
13		-12B	
14		-13B	
15		-60HR	
16		-84G	
17		-8AR	
18		-11B	
19		-3A	
20		-5A	
21		-26C	
22		-48GR	
23		-77HR	
24		-15B	
25		-20C	
26		-23C	
27		-16B	
28		-57HR	
29		-79KR	
30		-25C	
31		-19C	
32		-9AR	
33		-66KR	
34		-83G	
35		-67KR	
36		-59HR	
37		-51GR	

Subassembly No. X150A (P12A)

Type Hardware: MK-J-37B

Orifice: No. of Holes See ; Dia. of Holes See

Lower Adapter: EB-1-50552

Flow Test Data: 63 gpm in row 6 @ 45 psi

Date Assembled: 5/10/73 ; Location HFEF

Date Loaded in Reactor: 5/14/73 ; for Run 63

Initial Grid Position: 6E3

Notes:

- Upper orifice plate per EB-1-50778 with 7 holes of 0.219" dia. Lower orifice plate per EB-1-51168 was omitted. Shield per EB-1-50779 with 6 holes of 0.218" dia.

- All elements contain UO_2 -25 wt % PuO_2 fuel; uranium 93% enriched.

Position	Sponsor	Ident. No.	Comments
1	GE	F9F-04	
2		-10	
3		-18	Rotated 180°
4		-25	
5		-03	
6		-09	
7		-17	
8		-24	
9		-31	
10		-02	
11		-08	
12		-16	
13		-23	
14		-30	
15		-36	
16		-01	Rotated 180°
17		-07	
18		-15	
19		-22	
20		-29	
21		-35	
22		-40	
23		-06	
24		-13	
25		-21	
26		-28	
27		-34	
28		-39	
29		-11	
30		-20	
31		-27	
32		-33	
33		-38	
34		-19	
35		-26	Rotated 180°
36		-32	
37		-37	

Subassembly No. X155A

Type Hardware: GE F9F Grid-type

Orifice: No. of Holes 7; Dia. of Holes 0.262

Lower Adapter: EB-1-50448-D

Flow Test Data: ~ 48 gpm in row 5 @ 37.5 psi

Date Assembled: 11/21/74; Location HFEF

Date Loaded in Reactor: 12/7/74; for Run 75

Initial Grid Position: 5D2

Note:
All elements contain UO_2 -25 wt % PuO_2 fuel; uranium 93% enriched.

Position	Sponsor	Ident. No.	Comments
1	LASL	U-247	
2		U-252	
3		U-259	
4		U-245	
5		U-251	
6		KD-1 Dummy	
7		U-249	
8		U-243	
9		U-250	
10		U-254	
11		U-258	
12		U-244	
13		U-248	
14		U-253	
15		U-257	
16		U-242	
17		U-256	
18		U-246	
19		U-241	

Subassembly No. X156

Type Hardware: MK-E-19B

Orifice: No. of Holes 7; Dia. of Holes 0.328

Lower Adapter: EB-1-50448

Flow Test Data: 78 gpm in row 4 @ 38.5 psi

Date Assembled: 5/2/73; Location FASB

Date Loaded in Reactor: 5/14/73; for Run 63

Initial Grid Position: 4B1

Note:

All elements contain $(U_{0.85} - Pu_{0.15})C$ fuel; uranium 93% enriched.

Position	Sponsor	Ident. No.	Comments
1	HEDL	B79	Structural
2		B70A	
3		B68A	
4		B92	
5		B77	
6		B78	
7		B69A	

Subassembly No. X157B

Type Hardware: MK-B-7A

Orifice: No. of Holes 3; Dia. of Holes 0.162

Lower Adapter: EB-1-50448-D

Flow Test Data: ~ 13 gpm in row 4

Date Assembled: 7/10/73; Location HFEF

Date Loaded in Reactor: 7/14/73; for Run 64

Initial Grid Position: 4D2

Position	Sponsor	Ident. No.	Comments
1	HEDL	B82	Structural
2		B70A	
3		B68A	
4		B109	
5		B80	
6		B81	
7	↓	B69A	↓

Subassembly No. X157C

Type Hardware: MK-B-7A

Orifice: No. of Holes 3; Dia. of Holes 0.162

Lower Adapter: EB-1-50448-B

Flow Test Data: ~13 gpm in row 4

Date Assembled: 5/8/74; Location HFEF

Date Loaded in Reactor: 6/2/74; for Run 71A

Initial Grid Position: 4D2

Position	Sponsor	Ident. No.	Comments
1	ANL	A404AA3	
2		A416BV5	
3		AM4219A	Monitor Capsule; Unirradiated
4		A405AP5	
5		A419BA3	From X161
6		A412BO5	
7		A411BP5	
8		A403AP3	
9		A418AP3	From X161
10		AM4210B	Monitor Capsule; Unirradiated
11		A406BP1	
12		A421DA5	From X161
13		A415BV5	
14		A410BM5	
15		A417DP1	
16		A413BP5	
17		AM4101C	Monitor Capsule
18		A408BP3	
19		A420DP5	From X161

Subassembly No. X159A (ANL 0-4)

Type Hardware: MK-A-19A

Orifice: See Note 1

Lower Adapter: EB-1-50552-D

Flow Test Data: ~ 18 gpm in row 7 @ 45.3 psi

Date Assembled: 3/29/74; Location HFEF

Date Loaded in Reactor: 5/28/74; for Run 71

Initial Grid Position: 7B1

Notes:

1. Bonnet-type orifice with one 0.394" hole in plate and two 0.277" radial holes in bonnet.
2. All capsules contain UO_2 -25 wt % PuO_2 fuel; uranium 93% enriched. Capsules continue from X159 except as noted.

Position	Sponsor	Ident. No.	Comments
1	ANL	A519BA5	From X162
2		AM5207B	Non-fuel; Unirradiated
3		A516BV5	From X160
4		A518AP3	" "
5		A505AP5	" "
6		A515BV5	" "
7		A512B05	" "
8		AM5101C	" "
9		A504AA5	" "
10		AM5210B	Non-fuel; Unirradiated
11		A511BP5	From X160
12		AM5219A	Non-fuel; Unirradiated
13		A503AP5	From X160
14		A507BM5	" "
15		A510BM5	" "
16		A521DA5	From X162
17		A508BP5	From X160
18		A509B05	" "
19		A520DP5	From X162

Subassembly No. X160A

Type Hardware: MK-A-19A

Orifice: No. of Holes See Note 1 ; Dia. of Holes See Note 1

Lower Adapter: EB-1-50448

Flow Test Data: ~34 gpm in row 5 @ 38 psi

Date Assembled: 8/2/73 ; Location HFEF

Date Loaded in Reactor: 8/19/73 ; for Run 65

Initial Grid Position: 5E4

Notes:

1. Bonnet-type orifice with one 0.641" hole in transverse plate and two 0.453" radial holes.
2. Capsules from X160 and X162 contain UO_2 -25 wt % PuO_2 fuel; uranium 93% enriched.

Position	Sponsor	Ident. No.	Comments
1	ANL	A519BA5	
2		AM5207B	Monitor
3		A516BV5	
4		A518AP3	
5		A505AP5	
6		A524BP3	From X162
7		A512B05	
8		AM5101C	Monitor
9		A504AA5	
10		AM5210B	
11		A511BP5	
12		AM5319A	Monitor
13		A503AP5	
14		AM5A01D	From X162; Monitor
15		A510BM5	
16		A521DA5	
17		A522AP5	From X162
18		AM5313A	Monitor
19		A520DP5	

Subassembly No. X160B

Type Hardware: MK-A-19A

Orifice: No. of Holes See Note 1 ; Dia. of Holes See Note 1

Lower Adapter: EB-1-50448

Flow Test Data: ~ 34 gpm in row 5 @ 38 psi

Date Assembled: 8/26/74 ; Location HFEF

Date Loaded in Reactor: 9/27/74 ; for Run 74

Initial Grid Position: 5E4

Notes:

1. Bonnet-type orifice with one 0.641" hole in transverse plate and two 0.453" radial holes in bonnet.
2. Fueled capsules contain UO_2 -25 wt % PuO_2 fuel; uranium 93% enriched.

Subassembly No. X154

Type Hardware: MK-B-7C

Orifice: No. of Holes 3; Dia. of Holes 0.162

Lower Adapter: E0528-0004-DD

Flow Test Data: ~ 6 gpm in row 8

Date Assembled: 5/7/73; Location HFEF

Date Loaded in Reactor: 5/14/73; for Run 63

Initial Grid Position: 3A1

Position	Sponsor	Ident. No.	Comments
1	ORNL	C4-2	Structural
2	↓	0-18	Absorber
3		BTA-8	Absorber
4		Dummy	
5	ORNL	0-23	Absorber
6	↓	BTA-7	Absorber
7		C4-4	Structural

Position	Sponsor	Ident. No.	Comments
1		Dummy	
2	HEDL	OY	Structural
3		Dummy	
4		Dummy	
5	HEDL	B94	Structural
6		Dummy	
7	HEDL	OX	Structural

Subassembly No. X175A

Type Hardware: MK-B-7A

Orifice: No. of Holes 3; Dia. of Holes 0.162

Lower Adapter: EB-1-50448-D

Flow Test Data: ~ 14 gpm in row 4

Date Assembled: 7/5/73; Location HFEF

Date Loaded in Reactor: 7/14/73; for Run 64

Initial Grid Position: 4A1

Subassembly No. X179A

Type Hardware: MK-B-7A

Orifice: No. of Holes 3; Dia. of Holes 0.162

Lower Adapter: EB-1-52552-D

Flow Test Data: ~ 14 gpm in row 7

Date Assembled: 10/30/73; Location HFEF

Date Loaded in Reactor: 1/11/73; for Run 67A

Initial Grid Position: 7E5

Position	Sponsor	Ident. No.	Comments
1	HEDL	BCM2-8	Absorber
2		BCM2-9	
3		BCM2-3	
4		BCM2-10	
5		BCM2-5	
6		BCM2-11	
7		BCM2-7

Position	Sponsor	Ident. No.	Comments
1	ANL	648	MK-II Driver Fue
2		815	
3		821	
4		575	
5		644	
6		435	
7		618	
8		584	
9		595	
10		617	
11		565	
12		559	
13		494	
14		538	
15		780	
16		405	
17		728	
18		725	
19		032	
20		798	
21		673	
22		583	
23		722	
24		600	
25		585	
26		649	
27		659	
28		732	
29		594	
30		900	
31		832	
32		576	
33		371	
34		894	
35		866	
36		923	
37		381	

Subassembly No. X180

Type Hardware: MK-E-37C

Orifice: No. of Holes See Note

Lower Adapter: EB-1-50552

Flow Test Data: ~34.5 gpm in row 6 @ 45.3 psi

Date Assembled: 8/12/73; Location HFEF

Date Loaded in Reactor: 8/19/73; for Run 65

Initial Grid Position: 6D3

Note:

Bonnet-type orifice with one 0.594" hole in plate and two 0.422" holes in bonnet.

Position	Sponsor	Ident. No.	Comments
1	HEDL	P23B - 1A	
2		-25B	
3		-26B	
4		-27B	
5		-28B	
6		-29B	
7		- 2A	
8		-40B	
9		- 3A	
10		- 4A	
11		-49C	
12		-31B	
13		-5A	
14		-50C	
15		- 6A	
16		-32B	
17		- 7A	
18		- 8A	
19		- 9A	
20		-33B	
21		-72E	
22		-34B	
23		-10A	
24		-35B	
25		-36B	
26		-11A	
27		-73E	
28		-12A	
29		-13A	
30		-14A	
31		-62D	
32		-74E	
33		-37B	
34		-15A	
35		-38B	
36		-39B	
37		-16A	

Subassembly No. X181

Type Hardware: MK-J-37B

Orifice: No. of Holes 7; Dia. of Holes 0.219

Lower Adapter: EB-1-50448

Flow Test Data: 54 gpm in row 3 at 43 psi

Date Assembled: 5/24/73; Location FASB

Date Loaded in Reactor: 7/14/73; for Run 64

Initial Grid Position: 3E1

Note:

All elements contain UO_2 -25 wt % PuO_2 fuel; uranium 65% enriched.

Position	Sponsor	Ident. No.	Comments
1	HEDL	P23B-1A	
2		-25B	
3		-26B	
4		-27B	
5		-28B	
6		-29B	
7		-2A	
8		-40B	
9		-17A	New
10		-4A	
11		-52C	New
12		-31B	
13		-5A	
14		-3A	
15		-6A	
16		-32B	
17		-7A	
18		-8A	
19		-9A	
20		-33B	
21		-72E	
22		-34B	
23		-10A	
24		-35B	
25		-36B	
26		-11A	
27		-73E	
28		-12A	
29		-13A	
30		-14A	
31		-38B	
32		-74E	
33		-37B	
34		-15A	
35		-41B	New
36		-39B	
37		-16A	

Subassembly No. X181A

Type Hardware: MK-J-37B

Orifice: No. of Holes 7; Dia. of Holes 0.219

Lower Adapter: EB-1-50448

Flow Test Data: ~ 54 gpm in row 3 at 43 psi

Date Assembled: 4/8/74; Location HFEF

Date Loaded in Reactor: 4/9/74; for Run 71

Initial Grid Position: 3E1

Note:

All elements contain UO_2 -25 wt % PuO_2 fuel; uranium 65% enriched.

Position	Sponsor	Ident. No.	Comments
1	HEDL	P23B-32B	
2		-A2	New
3		-A1R	New
4		-1A	
5		-A4	New
6		-7A	
7		-53C	New
8		-29B	
9		-A3	New
10		-S1	New
11		-42B	New
12		-8A	
13		-31B	
14		-18A	New
15		-A5	New
16		-15A	
17		-38B	
18		-36B	
19		-9A	
20		-5A	
21		-3A	
22		-27B	
23		-B2	New
24		-64D	New
25		-11A	
26		-33B	
27		-54C	New
28		-B1	New
29		-B4	New
30		-74E	
31		-73E	
32		-72E	
33		-B3	New
34		-16A	
35		-S2	New
36		-B5	New
37		-34B	

Subassembly No. X181B

Type Hardware: MK-J-37B

Orifice: No. of Holes 7; Dia. of Holes 0.219

Lower Adapter: EB-1-5C448

Flow Test Data: ~54 gpm in row 3 @ 43 psi

Date Assembled: 1/31/75; Location HFEF

Date Loaded in Reactor: 2/17/75; for Run 76

Initial Grid Position: 3C1

Notes:

1. Unless otherwise shown, all elements continue from X181A.

2. All elements contain UO_2 - 25 wt % PuO_2 fuel; uranium 65% enriched.

Position	Sponsor	Ident. No.	Comments
1	LASL	UNC-199	$(U_{0.85}-Pu_{0.15})C$
2		UNC-190	
3		UNC-193	
4		UNC-188	
5		UNC-209	
6		UNC-207	
7		UNC-201	
8	↓	UNC-196	↓
9	ANL	S1C	$(U_{0.80}-Pu_{0.20})O_2$
10	ANL	S1D	↓
11	ANL	S1B	↓
12	LASL	BMI3-6	$(U_{0.80}-Pu_{0.20})N$
13		BMI3-7	↓
14		BMI3-8	↓
15		BMI2-3	↓
16		W12F	$(U_{0.80}-Pu_{0.20})C$
17		W5F	↓
18		W6F	↓
19	↓	K44	↓

Subassembly No. X182

Type Hardware: MK-A-19A

Orifice: No. of Holes 7; Dia. of Holes 0.250

Lower Adapter: EB-1-50448

Flow Test Data: ~ 51 gpm in row 5 @ 37.6 psi

Date Assembled: 5/11/73; Location HFEF

Date Loaded in Reactor: 5/13/73; for Run 63

Initial Grid Position: 5B4

Note:

All uranium 93% enriched.

Position	Sponsor	Ident. No.	Comments
1		Dummy	
2	ORNL	0-13	Absorber
3		Dummy	
4		Dummy	
5		Dummy	
6	ORNL	0-12	Absorber
7	ORNL	0-27	Absorber

Subassembly No. X185

Type Hardware: MK-B-7A

Orifice: No. of Holes 3; Dia. of Holes 0.162

Lower Adapter: EB-1-50560-D

Flow Test Data: 6 gpm in row 8

Date Assembled: 5/8/73; Location FASB

Date Loaded in Reactor: 5/15/73; for Run 63

Initial Grid Position: 8B1

Position	Sponsor	Ident. No.	Comments
1	HEDL	P12A-31D	
2		-37E	
3		-29D	
4		-36E	
5		-32D	
6		-39F	
7		-54H	
8		-35E	
9		-63K	
10		-45G	
11		-56H	
12		-47G	
13		-30D	
14		-21C	
15		-4A	
16		-65K	
17		-64K	
18		-52GR	
19		-55H	

Subassembly No. X186 (HEDL P12AA)

Type Hardware: MK-Q-19A

Orifice: No. of Holes See Note 1 ; Dia. of Holes See Note 1

Lower Adapter: EB-1-50552

Flow Test Data: ~33 gpm in. row 6 @ 45.3 psi

Date Assembled: 8/6/73 ; Location HFEF

Date Loaded in Reactor: 8/18/73 ; for Run 65

Initial Grid Position: 6B4

Notes:

1. Bonnet-type orifice with one 0.594" hole in plate and two 0.422" radial holes.
2. All elements contain UO_2 -25 wt % PuO_2 ; uranium 93% enriched.

Position	Sponsor	Ident. No.	Comments
1	HEDL	BMV2-6	Absorber
2		BMV2-1	
3		BMV2-9	
4		BMV2-7	
5		BMV2-2	
6		BMV2-10	
7		BMV2-8	

Subassembly No. X187

Type Hardware: MK-B-7A

Orifice: No. of Holes 3 ; Dia. of Holes 0.162

Lower Adapter: EB-1-50552-D

Flow Test Data: 15 gpm in row 7

Date Assembled: 4/20/73 ; Location FASB

Date Loaded in Reactor: 5/14/73 ; for Run 63

Initial Grid Position: 7C5

Position	Sponsor	Ident. No.	Comments
1	HEDL	BMV2-4	Absorber
2		BMV2-3	
3		BMV2-9	
4		BMV2-5	
5		BMV2-2	
6		BMV2-11	
7		BMV2-8	

Subassembly No. X187A

Type Hardware: MK-B-7A

Orifice: No. of Holes 3; Dia. of Holes 0.162

Lower Adapter: EB-1-50552-D

Flow Test Data: ~ 15 gpm in row 7

Date Assembled: 4/1/74; Location HFEF

Date Loaded in Reactor: 5/27/74; for Run 71A

Initial Grid Position: 7C3

Position	Sponsor	Ident. No.	Comments
1	NRL	H-5	Structural

Subassembly No. X188

Type Hardware: MK-M-1

Orifice: No. of Holes 3; Dia. of Holes 0.162

Lower Adapter: EB-1-50448-D

Flow Test Data: 13 gpm in row 4

Date Assembled: 5/9/73; Location FASB

Date Loaded in Reactor: 5/15/73; for Run 63

Initial Grid Position: 4F2

Pcsition	Sponsor	Ident. No.	Comments
1	HEDL	BV1-1	Absorber
2		BV1-2	
3		BV1-3	
4		BV1-4	
5		BV1-5	
6		BV1-6	
7		BV1-7	
8		BV1-8	
9		BV1-9	
10		BV1-10	
11		BV1-11	
12		BV1-12	
13		BV1-13	
14		BV1-14	
15		BV1-15	
16		BV1-16	
17		BV1-17	
18		BV1-18	
19		BV1-19	

Subassembly No. X189

Type Hardware: MK-B-19

Orifice: No. of Holes 2; Dia. of Holes 0.0995
(in each of the three plates in series)

Lower Adapter: EB-1-50552-D

Flow Test Data: 1.98 gpm in row 7

Date Assembled: 7/5/73; Location FASB

Date Loaded in Reactor: 7/14/73; for Run 64

Initial Grid Position: 7B3

Position	Sponsor	Ident. No.	Comments
1	GE	F20-C1	
2		F20-C2	
3		F20-E5	
4		F20-E2	
5		F20-E8	
6		F20-S7	
7		P19-17R	
8		F20-C12	
9		F20-S5	
10		F20-S1	
11		P19-18R	
12		F5M	
13		F20-E4	
14		F20-S3	
15		F5L	
16		F5H	
17		F20-C11	
18		F5I	
19		F5J	

Subassembly No. XL90

Type Hardware: MK-A-19A

Orifice: No. of Holes: See Note 1

Lower Adapter: EB-1-50448

Flow Test Data: ~ 31 gpm in row 4 @ 38.5 psi

Date Assembled: 10/29/73; Location HFEF

Date Loaded in Reactor: 11/12/73; for Run 67A

Initial Grid Position: 4E1

Notes:

1. Bonnet-type orifice with one 0.581" hole in plate and two 0.411" radial holes in the bonnet.
2. Capsules contain UO_2 -25 wt % PuO_2 fuel; uranium 93% enriched.

Position	Sponsor	Ident. No.	Comments
1	GE	F20-E1	
2		F20-C2	
3		F20-E5	
4		F20-E2	
5		P19-29	
6		F20-S7	
7		P19-17R	
8		F20-C12	
9		F20-S5	
10		F20-S4	
11		P19-18R	
12		F5P	
13		F20-E4	
14		F20-S3	
15		P19-31	
16		F5H	
17		F20-C7	
18		F5I	
19		F5G	

Subassembly No. X190A

Type Hardware: MK-A-19A

Orifice: No. of Holes See Note 1

Lower Adapter: EB-1-50448

Flow Test Data: ~40 gpm in row 2 @ 42 psi

Date Assembled: 1/15/74; Location HFEF

Date Loaded in Reactor: 1/28/74; for Run 69A

Initial Grid Position: 2B1

Notes:

1. Bonnet-type orifice with one 0.652" hole in plate and two 0.461" radial holes in the bonnet.
2. Capsules contain UO_2 -25 wt % PuO_2 fuel; uranium 93% enriched.

Position	Sponsor	Ident. No.	Comments
1		Dummy	
2		Dummy	
3		Dummy	
4		Dummy	
5		Dummy	
6	GE	F20-S7	
7		Dummy	
8		Dummy	
9	GE	F20-S5	
10	GE	F20-S6	
11		Dummy	
12	GE	F50	
13	GE	F20-E4	
14		Dummy	
15	GE	F8F	
16		Dummy	
17	GE	F20-C8	
18	GE	F5I	
19		Dummy	

Subassembly No. K150B

Type Hardware: MK-A-19A

Orifice: No. of Holes: See Note 1

Lower Adapter: EB-1-50448

Flow Test Data: 31 gpm in row 4 @ 38.5 psi

Date Assembled: 2/25/74; Location HFEF

Date Loaded in Reactor: 3/5/74; for Run 70

Initial Grid Position: 4E1

Notes:

1. Bonnet-type orifice with one 0.581" hole in plate and two 0.411" radial holes in the bonnet.
2. Capsules contain UD_2 -25 wt % PuO_2 fuel; uranium 93% enriched.

Position	Sponsor	Ident. No.	Comments
1	HEDL	N084	
2		064	
3		042	
4		004	
5		096	
6		156	
7		108	
8		151	
9		010	
10		118	
11		041	
12		067	
13		021	
14		047	
15		017	
16		168	
17		166	
18		188	
19		122	
20		068	
21		053	
22		040	
23		173	
24		164	
25		190	
26		178	
27		007	
28		043	
29		183	
30		143	
31		148	
32		121	
33		080	
34		191	
35		145	
36		136	
37		090	

Subassembly No. X191

Type Hardware: MK E-37D

Orifice: No. of Holes 11; Dia. of Holes 0.188

Lower Adapter: EB-1-50448

Flow Test Data: 48 gpm in row 4 @ 38.5 psi

Date Assembled: 8/10/73; Location HFEF

Date Loaded in Reactor: 8/18/73; for Run 65

Initial Grid Position: 4C2

Note:

All elements contain UO_2 -25 wt % PuO_2 fuel; uranium 76% enriched.

Position	Sponsor	Ident. No.	Comments
1	HEDL	PNL 9-61	Oxide Fuel
2		9-59	
3		9-58	
4		9-57	
5		9-56	
6		9-48	
7		9-47	
8		9-46	
9		9-51	
10		9-43	
11		9-41	
12		9-40	
13		9-39	
14		9-38	
15		9-67	
16		9-35	
17		9-33	
18		9-32	
19		9-31	
20		9-66	
21		9-28	
22		9-27	
23		9-65	
24		9-24	
25		9-23	
26		9-22	
27		9-21	
28		9-19	
29		9-11	
30		9-16	
31		9-15	
32		9-14	
33		9-6	
34		9-5	
35		9-63	
36		9-62	
37		9-1	

Subassembly No. X192 (PNL-9)

Type Hardware: MK-E-37D

Orifice: No. of Holes 4; Dia. of Holes 0.188

Lower Adapter: EB-1-50552-D

Flow Test Data: ~25 gpm in row 6 @ 45.3 psi

Date Assembled: 9/13/73; Location HFEF

Date Loaded in Reactor: 9/23/73; for Run 66

Initial Grid Position: 6C3

Notes:

1. All elements continue from X087.
2. UO_2 -25 wt % PuO_2 fuel; uranium 30% enriched.

Position	Sponsor	Ident. No.	Comments
1	HEDL	PNL-10-5	Oxide Fuel
2		10-11	
3		10-26	
4		10-69	
5		10-62	
6		10-64	
7		10-24	
8		10-33	
9		10-43	
10		10-2	
11		10-15	
12		10-9	
13		10-32	
14		10-41	
15		10-56	
16		10-1	
17		10-14	
18		10-66	
19		10-31	
20		10-40	
21		10-48	
22		10-61	
23		10-6	
24		10-21	
25		10-68	
26		10-70	
27		10-47	
28		10-60	
29		10-19	
30		10-67	
31		10-38	
32		10-71	
33		10-74	
34		10-27	
35		10-36	
36		10-51	
37		10-57	

Subassembly No. X193 (PNL-10)

Type Hardware: MK-E-37D

Orifice: No. of Holes 8; Dia. of Holes 0.188

Lower Adapter: EB-1-50552-D

Flow Test Data: 40 gpm in row 6 @ 45.3 psi

Date Assembled: 9/4/73; Location HFEF

Date Loaded in Reactor: 9/23/73; for Run 66

Initial Grid Position: 6A3

Notes:

1. All elements continue from X093.
2. UO_2 -25 wt % PuO_2 ; uranium 65% enriched.

Position	Sponsor	Ident. No.	Comments
1	HEDL	PNL-11-57	Oxide Fuel
2		11-51	
3		11-75	
4		11-69*	
5		11-58	
6		11-52	
7		11-38	
8		11-29	
9		11-19	
10		11-60	
11		11-54	
12		11-39	
13		11-71*	
14		11-21	
15		11-6	
16		11-61	
17		11-55	
18		11-40R	
19		11-31R	
20		11-70R	
21		11-7	
22		11-1R	
23		11-56	
24		11-41	
25		11-32	
26		11-23	
27		11-9R	
28		11-2	
29		11-43	
30		11-73*	
31		11-64*	
32		11-10R	
33		11-4R	
34		11-35	
35		11-74R	
36		11-63	
37		11-5	

Subassembly No. X194 (PNL-11)

Type Hardware: MK-E-37D

Orifice: No. of Holes 10; Dia. of Holes 0.188

Lower Adapter: EB-1-50448-D

Flow Test Data: ~50 gpm in row 3 @ 43.0 psi

Date Assembled: 8/30/73; Location HFEF

Date Loaded in Reactor: 9/23/73; for Run 66

Initial Grid Position: 3C2

Notes:

1. All elements continue from X107B.
2. UO_2 -25 wt % PuO_2 fuel; uranium 65% enriched.

*Wire wrap 180° out of phase.

Position	Sponsor	Ident. No.	Comments
1	HEDL	B-99	Structural
2		B-95	
3		B-101	
4		B-100	
5		B-96	
6		B-98	
7		B-97	

Subassembly No. X195

Type Hardware: MK-B-7A

Orifice: No. of Holes 3; Dia. of Holes 0.162

Lower Adapter: EB-1-50448-D

Flow Test Data: 14.5 gpm in row 2

Date Assembled: 9/4/73; Location FASB

Date Loaded in Reactor: 9/23/73; for Run 66A

Initial Grid Position: 2B1

Subassembly No. X195A

Type Hardware: MK-B-7A

Orifice: No. of Holes 3; Dia. of Holes 0.162

Lower Adapter: EB-1-53448-D

Flow Test Data: ~ 15 gpm in row 2

Date Assembled: 1/8/74; Location HFEF

Date Loaded in Reactor: 1/10/74; for Run 69B

Initial Grid Position: 2B1

Position	Sponsor	Ident. No.	Comments
1	HEDL	B105	Structural
2		B95	
3		B107	
4		B106	
5		B96	
6		B98	
7		B97

Position	Sponsor	Ident. No.	Comments
1	WARD	W20-4	
2	↓	-1	
3		-7	
4		-5	
5		-2	
6		-6	
7		-3	

Note:

All elements contain UO_2 -2.5 wt % PuO_2 fuel;
uranium 0.7 % enriched.

Subassembly No. X196

Type Hardware: MK-S-1B

Orifice: See W 628F939 and 628F916

Lower Adapter: EB-1-50552-D

Flow Test Data: 10.2 gpm in row 6 @ 45.3 psi

Date Assembled: 1/9/74; Location FASB

Date Loaded in Reactor: 2/3/74; for Run 69B

Initial Grid Position: 7C6

Position	Sponsor	Ident. No.	Comments
1	HEDL	BCM2-12	Absorber
2		Dummy	
3		Dummy	
4		Dummy	
5		Dummy	
6		Dummy	
7		Dummy	

Subassembly No. X197

Type Hardware: MK-B-7A

Orifice: No. of Holes 3; Dia. of Holes 0.162

Lower Adapter: EE-1-50552-D

Flow Test Data: 13.7 gpm in row 7

Date Assembled: 12/5/73; Location FASB

Date Loaded in Reactor: 12/16/73; for Run 68A

Initial Grid Position: 7B3

Position	Sponsor	Ident. No.	Comments
1		Dummy	
2		Dummy	
3	HEDL	B103	Structural
4	HEDL	B102	Structural
5	HEDL	B104	Structural
6		Dummy	
7		Dummy	

Subassembly No. X198

Type Hardware: MK-B-7A

Orifice: No. of Holes 3; Dia. of Holes 0.162

Lower Adapter: EB-1-50448-D

Flow Test Data: 14.8 gpm in row 2

Date Assembled: 12/5/73; Location FASB

Date Loaded in Reactor: 12/16/73; for Run 68A

Initial Grid Position: 2D1

Position	Sponsor	Ident. No.	Comments
1	WARD	W8-47	
2		-27	
3		-45	
4		-50	
5		-55	
6		-44	
7		-11	
8		-20	
9		-51	
10		-7	
11		-61	
12		-24	
13		-53	
14		-48	
15		-8	
16		-56	
17		-26	
18		-5	
19		-46	
20		-21	
21		-49	
22		-54	
23		-37	
24		-57	
25		-60	
26		-28	
27		-62	
28		-10	
29		-63	
30		-25	
31		-9	
32		-58	
33		-22	
34		-42	
35		-23	
36		-52	
37		-67	

Subassembly No. X199

Type Hardware: WSA-8 Grid-type

Orifice: No. of Holes 6; Dia. of Holes 0.255

Lower Adapter: EB-1-51540-D

Flow Test Data: 48.3 gpm in row 3 @ 43.0 psi

Date Assembled: 5/15/74; Location FASB

Date Loaded in Reactor: 6/2/74; for Run 71

Initial Grid Position: 3F1

Note:

All elements contain UO_2 - 25 wt % PuO_2 ; uranium 66% enriched.

Position	Sponsor	Ident. No.	Comments
1	NRL	H-4	Structural

Subassembly No. X200

Type Hardware: MK-M-1A

Orifice: No. of Holes 3; Dia. of Holes 0.162

Lower Adapter: EB-1-50552-D

Flow Test Data: 14.6 gpm in row 7

Date Assembled: 4/7/74; Location FASB

Date Loaded in Reactor: 6/1/74; for Run 71A

Initial Grid Position: 7A2

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Position	Sponsor	Ident. No.	Comments
1	HEDL	N-180	
2		N-087	
3		-192	
4		-117	
5		-154	
6		-124	From X096
7		-196	From X096
8		-095	From X096
9		-149	
10		-126	
11		-123	
12		-086	From X096
13		-054	From X096
14		-140	From X096
15		-082	
16		-129	
17		-174	
18		-125	From X096
19		-071	From X096
20		-062	From X096
21		-107	From X096
22		-195	
23		-085	
24		-175	
25		-200	From X096
26		-015	From X096
27		-058	
28		-030	
29		-158	
30		-106	
31		-119	
32		-127	
33		-063	
34		-083	
35		-019	
36		-037	
37		-078	

Subassembly No. X202

Type Hardware: MK-E-37D

Orifice: No. of Holes 12; Dia. of Holes 0.188

Lower Adapter: EB-1-50448

Flow Test Data: ~ 47.5 gpm in row 5 @ 37.6 psi

Date Assembled: 4/9/74; Location HFEF

Date Loaded in Reactor: 4/10/74; for Run 71

Initial Grid Position: 5C2

Notes:

1. All elements contain UO_2 -25 wt % PuO_2 fuel; uranium 76% enriched.
2. All elements continue from X097 unless shown as X096.

Position	Sponsor	Ident. No.	Comments
1	HEDL	P23C-1A	
2		-38C	
3		-39C	
4		-40C	
5		-41C	
6		-42C	
7		-2A	
8		-43C	
9		-3A	
10		-4A	
11		-80H	
12		-44C	
13		-5A	
14		-81H	
15		-25B	
16		-45C	
17		-6A	
18		-7A	
19		-8A	
20		-58DR	
21		-71G	
22		-46C	
23		-9A	
24		-47C	
25		-48C	
26		-26B	
27		-72G	
28		-27B	
29		-10A	
30		-11A	
31		-93J	
32		-73G	
33		-28B	
34		-12A	
35		-49C	
36		-29B	
37		-13A	

Subassembly No. X203

Type Hardware: MK-J-37B

Lower Orifice: No. of Holes 7; Dia. of Holes 0.242

Lower Adapter: EB-1-50448

Flow Test Data: 63.5 gpm in row 3 @ 43.0 psi

Date Assembled: 5/17/74; Location FASB

Date Loaded in Reactor: 6/1/74; for Run 71A

Initial Grid Position: 3B1

Notes:

1. Upper orifice plate per EB-1-50778 with seven 0.219" holes.
2. Shield per EB-1-50779 with six 0.281" holes.
3. Grid bars have a special backstop for shorter P23C end-plug design.
4. All elements contain UO_2 -25 wt % PuO_2 fuel; uranium 65% enriched.

Position	Sponsor	Ident. No.	Comments
1	HEDL	P23C-1A	
2		-38C	
3		-39C	
4		-40C	
5		-41C	
6		-42C	
7		-2A	
8		-43C	
9		-14A	Unirradiated
10		-4A	
11		-82H	Unirradiated
12		-44C	
13		-5A	
14		-88HD	Unirradiated
15		-30B	Unirradiated
16		-45C	
17		-6A	
18		-7A	
19		-8A	
20		-58DR	
21		-15A	Unirradiated
22		-46C	
23		-9A	
24		-47C	
25		-48C	
26		-26B	
27		-72G	
28		-27B	
29		-10A	
30		-11A	
31		-98JLD	Unirradiated
32		-101K	Unirradiated
33		-28B	
34		-12A	
35		-50C	Unirradiated
36		-59D	Unirradiated
37		-13A	

Subassembly No. X203A

Type Hardware: MK-J-37B

Lower

Orifice: No. of Holes 7; Dia. of Holes 0.242

Lower Adapter: EB-1-50448

Flow Test Data: 63.5 gpm in row 3 @ 43.0

Date Assembled: 9/12/74; Location HFEF

Date Loaded in Reactor: 9/30/74; for Run 74

Initial Grid Position: 3B1

Notes:

1. Upper orifice plate per EB-1-50778 with seven 0.219" holes.
2. Shield per EB-1-50779 with six 0.281" holes.

3. Grid bars have a special backstop for shorter P23C end-plug design.
4. All elements contain UO_2 -25 wt % PuO_2 fuel; uranium 65% enriched.

Position	Sponsor	Ident. No.	Comments
1	GE	F9D-33	
2		-31	
3		-37	
4		-20	
5		-16	
6		-11	
7		-28	
8		-21	
9		-17	
10		-12	
11		-7	
12		-29	
13		-18	
14		-13	
15		-8	
16		-4	
17		-14	
18		-9	
19		-5	

Subassembly No. X204

Type Hardware: MK-E-19G

Orifice: No. of Holes See Note 1

Lower Adapter: EB-1-50552-D

Flow Test Data: ~ 23 gpm in row 7 @ 45.3 psi

Date Assembled: 5/14/74; Location HFEF

Date Loaded in Reactor: 6/2/74; for Run 71

Initial Grid Position: 7C1

Notes:

1. Bonnet-type orifice with one 0.486" hole in transverse plate and two 0.344" holes in bonnet, 180° apart.
2. All elements continue from X058. UO_2 -25 wt % PuO_2 fuel; uranium 93% enriched.

Subassembly No. X205

Type Hardware: MK-B-7A

Orifice: No. of Holes 3; Dia. of Holes 0.162

Lower Adapter: EB-1-50560-D

Flow Test Data: 6 gpm in row 8

Date Assembled: 8/16/74; Location FASB

Date Loaded in Reactor: 9/28/74; for Run 74A

Initial Grid Position: 8B5

Position	Sponsor	Ident. No.	Comments
1	ORNL	0-28X	Absorber
2		0-31	
3		0-33	
4		0-34	
5		0-29X	
6		0-30	
7		0-32

Position	Sponsor	Ident. No.	Enrichment
1	GA	G-19	48.8%
2	GA	G-20	48.8%
3	GA	G-21	48.8%
4	GA	G-22	48.8%
5	GA	G-23	48.8%
6	ANL	A8-11BG	1.5%
7	ANL	A8-8BG	1.5%
8	ANL	A8-4B	1.5%
9	ANL	A8-3A	17.3%
10	ANL	A8-10AG	17.3%
11	ANL	A8-7B	1.5%
12	ANL	A8-5B	1.5%
13	ANL	A8-1A	17.3%
14	ANL	A8-9BG	1.5%
15	GA	G-14	40%
16	GA	G-15	40%
17	GA	G-16	40%
18	GA	G-17	40%
19	GA	G-18	40%

Subassembly No. X206

Type Hardware: MK-J-19A (with special filler strips)

Lower

Orifice: No. of Holes 7; Dia. of Holes 0.157

Lower Adapter: EB-1-50448-D

Flow Test Data: ~26.6 gpm in row 4 @ 38.5 psi

Date Assembled: 11/20/74; Location FASB

Date Loaded in Reactor: 12/8/74; for Run 75

Initial Grid Position: 4B3

Notes:

1. Upper orifice per EB-1-50778-B with seven 0.185" holes.
2. Shield per EB-1-50779-C with six 0.141" holes.

3. GA capsules contain UO_2 -20 wt % PuO_2 . ANL capsules A8-1A, -3A, -10AG contain UO_2 - 30 wt % PuO_2 ; rest contain UO_2 - 40 wt % PuO_2 .

Notes:

1. Elements in grid positions 35, 36, 45, 46, 47, 56, 57, and 71 are unirradiated, untagged MK II cold-line elements.
2. Element in grid position 3 was taken from position 46 in subassembly C-2565S.
3. All other elements continue from subassembly C-2565S, in identical grid positions.
4. The elements from C-2565S are xenon-tagged MK II cold-line elements.

Subassembly No. X207

Type Hardware: Standard 91-pin Mark II Driver

Orifice: Not Used

Lower Adapter: EB-1-51537

Flow Test Data: ~148 gpm in row 1 @ 42 psi

Date Assembled: 1/28/75; Location HFEF

Date Loaded in Reactor: 2/19/75; for Run 76

Initial Grid Position: 1A1

Notes:

1. Elements in grid positions 35, 36, 45, 46, 47, 56, and 57 are unirradiated, untagged MK II cold-line elements.
2. Element in grid position 3 was taken from position 46 in subassembly B-3247S.
3. All other elements continue from subassembly B-3247S, in identical grid positions.
4. The elements from B-3247S are xenon-tagged MK II cold-line elements.

Subassembly No. X208

Type Hardware: Standard 91-pin Mark II Driver

Orifice: Not Used

Lower Adapter: EB-1-51538

Flow Test Data: ~71 gpm in row 6 @ 45.3 psi

Date Assembled: 1/29/75; Location HFEF

Date Loaded in Reactor: 2/16/75; for Run 76

Initial Grid Position: 6B4

Position	Sponsor	Ident. No.	Comments
1	ANL	X6091	
2		X5049	
3		X4559	
4		X5285	
5		X5286	
6		X5048	
7		X5074	
8		X4555	
9		X6083	
10		X4597	
11		X5125	
12		X5047	
13		X5044	
14		X5288	
15		X6076	
16		X5035	
17		X4567	
18		X5970	
19		X4675	
20		X4653	
21		X4714	
22		X4556	
23		X4579	
24		X6114	
25		X6143	
26		X4571	
27		X4697	
28		X4707	
29		X4684	
30		X4570	
31		X4695	
32		X4694	
33		X6002	
34		X4629	
35		X6123	
36		X6009	
37		X6046	

Subassembly No. X212

Type Hardware: MK-E-37C

See Note 1
Orifice: No. of Holes _____; Dia. of Holes Note 1

Lower Adapter: EB-1-50552-D

Flow Test Data: 26 gpm in row 6 @ 45.3 psi

Date Assembled: 7/30/74; Location FASB

Date Loaded in Reactor: 8/14/74; for Run 73

Initial Grid Position: 6E3

Notes:

1. Bonnet-type orifice per EB-1-52523-B, with one 0.516" hole in the plate and two 0.359" holes in the bonnet.
2. All elements contain Mark II driver fuel.

Position	Sponsor	Ident. No.	Comments
1	HEDL	P12A-24C	
2		-10AR	Unirradiated
3		-8AR	
4		-14B	
5		-1A	
6		-11B	
7		-15B	
8		-6AR	
9		-12B	
10		-3A	
11		-20C	
12		-25C	
13		-17B	Unirradiated
14		-5A	
15		-23C	
16		-27C	Unirradiated
17		-26C	
18		-16B	
19		-9AR	

Subassembly No. X213 (HEDL P12AB)

Type Hardware: MK-Q-19A

Orifice: No. of Holes See Note 1

Lower Adapter: EB-1-50552

Flow Test Data: ~33 gpm in row 6 @ 45.3 psi

Date Assembled: 11/8/74; Location HFEF

Date Loaded in Reactor: 12/7/74; for Run 75A

Initial Grid Position: 6B4

Notes:

1. Bonnet-type orifice with one 0.594" hole in the plate and two 0.422" radial holes in the bonnet.
2. All elements contain UO_2 -25 wt % PuO_2 fuel; uranium 93% enriched.

Position	Sponsor	Ident. No.	Comments
1	HEDL	P15-54C	
2		73D	
3		26B	
4		5A	
5		75D	
6		76D	
7		64C	
8		1A	
9		29B	
10		53C	
11		50C	
12		96D	
13		86D	
14		38B	
15		2A	
16		87D	
17		88D	
18		91D	
19		37B	
20		15A	
21		30B	
22		6A	
23		77D	
24		74D	
25		63C	
26		95D	
27		14A	
28		33B	
29		51C	
30		52C	
31		85D	
32		25B	
33		4A	
34		78D	
35		49C	
36		3A	
37		28B	

Subassembly No. X215

Type Hardware: MK-J-37B

Orifice: No. of Holes 7; Dia. of Holes 0.219

Lower Adapter: EB-1-50448

Flow Test Data: 22.5 gpm in row 3 @ 43 psi

Date Assembled: 12/18/74; Location FASB

Date Loaded in Reactor: 1/9/75; for Run 75D

Initial Grid Position: 3A2

Notes:

1. Bonnet-type lower orifice with one 0.464" hole in plate and two 0.327" holes in bonnet.

2. Shield per EB-1-50773, with six 0.250 holes
3. Elements with A and 3 suffix contain UO_2 -25 wt % PuO_2 ; elements with C and 3 suffix contain UO_2 -20 wt % PuO_2 . Uranium 0.7% enriched (natural uranium).

Subassembly No. X216

Type Hardware: MK-B-7A

Orifice: No. of Holes 3; Dia. of Holes 0.162

Lower Adapter: EB-1-50448-D

Flow Test Data: ~ 14 gpm in row 2

Date Assembled: 9/16/74; Location HFEF

Date Loaded in Reactor: 9/28/74; for Run 74A

Initial Grid Position: 2D1

Position	Sponsor	Ident. No.	Comments
1	HEDL	B-120	Structural
2		Dummy	
3	HEDL	B-119	Structural
4	HEDL	B-118	Structural
5		Dummy	
6	HEDL	B-121	Structural
7		Dummy

Position	Sponsor	Ident. No.	Comments
1	HEDL	B-120	Structural
2	HEDL	B-123	Structural
3	HEDL	B-119	Structural
4		Dummy	
5	HEDL	B-125	Structural
6	HEDL	B-121	Structural
7	HEDL	B-124	Structural

Note:

B-123, B-124, and B-125 are new; the rest continue from X216.

AS-BUILT LOADING

Subassembly No. X216A

Type Hardware: MK-B-7A

Orifice: No. of Holes 3; Dia. of Holes 0.162

Lower Adapter: EB-1-50448-D

Flow Test Data: ~ 14 gpm in row 2

Date Assembled: 1/9/75; Location HFEF

Date Loaded in Reactor: 1/21/75; for Run 75E

Initial Grid Position: 2D1

Subassembly No. X217

Type Hardware: MK-B-7A

Orifice: No. of Holes 3; Dia. of Holes 0.162

Lower Adapter: EB-1-50552-D

Flow Test Data: ~ 14 gpm in row 7

Date Assembled: 11/5/74; Location HFEF

Date Loaded in Reactor: 12/8/74; for Run 75A

Initial Grid Position: 7A5

Position	Sponsor	Ident. No.	Comments
1	HEDL	B-172	Structural
2	GE	LP5A	
3	HEDL	B-168	
4	HEDL	B-167	
5	HEDL	B-170	
6	HEDL	B-171	
7	HEDL	B-169

Position	Sponsor	Ident. No.	Comments
1	HEDL	B176	Structural
2		B174	
3		B177	
4		B173	
5		B173	
6		B175	
7		B179	

Subassembly No. X218

Type Hardware: MK-B-7A

Orifice: No. of Holes 3; Dia. of Holes 0.162

Lower Adapter: EB-1-50552-D

Flow Test Data: ~ 14 gpm in row 7

Date Assembled: 11/6/74; Location HFEF

Date Loaded in Reactor: 12/8/74; for Run 75A

Initial Grid Position: 7C3

Position	Sponsor	Ident. No.	Comments
1		Dummy	
2		Dummy	
3		Dummy	
4	HEDL	BOPT-1A-1R	Absorber
5		Dummy	
6	HEDL	BOPT-1A-2R	Absorber
7		Dummy	

Subassembly No. X219

Type Hardware: MK-B-7A

Orifice: No. of Holes 3; Dia. of Holes 0.162

Lower Adapter: EB-1-50560-D

Flow Test Data: 5.9 gpm in row 8

Date Assembled: 12/19/74; Location FASB

Date Loaded in Reactor: 1/19/75; for Run 75D

Initial Grid Position: 8C5

Subassembly No. X220

Type Hardware: MK-B-7A

Orifice: No. of Holes 3; Dia. of Holes 0.162

Lower Adapter: EB-1-50560-D

Flow Test Data: 6 gpm in row 9

Date Assembled: 12/19/74; Location FASB

Date Loaded in Reactor: 1/9/75; for Run 75D

Initial Grid Position: 9C5

Position	Sponsor	Ident. No.	Comments
1		Dummy	
2		Dummy	
3		Dummy	
4	HEDL	BOPT-1A-3R	Absorber
5		Dummy	
6		Dummy	
7		Dummy

Position	Sponsor	Ident. No.	Comments
1	HEDL	B127	Structural
2		B132	
3		B130	
4		B126	
5		B131	
6		B129	
7		B128	

Subassembly No. X221

Type Hardware: MK-B-7A

Orifice: No. of Holes 3; Dia. of Holes 0.162

Lower Adapter: EB-1-50448-D

Flow Test Data: 13 gpm in row 4

Date Assembled: 9/13/74; Location FASB

Date Loaded in Reactor: 9/27/74; for Run 74A

Initial Grid Position: 4F2

Position	Sponsor	Ident. No.	Comments
1	HEDL	B137	Structural
2		B138	
3		B136	
4		B134	
5		B139	
6		B135	
7		B133	

Subassembly No. X222

Type Hardware: MK-E-7A

Orifice: No. of Holes 3; Dia. of Holes 0.162

Lower Adapter: EB-1-50448-D

Flow Test Data: 12.3 gpm in row 4

Date Assembled: 9/13/74; Location FASB

Date Loaded in Reactor: 10/1/74; for Run 74A

Initial Grid Position: 4C3

Position	Sponsor	Ident. No.	Comments
1	HEDL	B115	Structural
2	HEDL	B117	
3	HEDL	B112A	
4	ANL	EJ99	
5	HEDL	3116	
6	HEDL	B110A	
7	HEDL	B113	

Subassembly No. X223

Type Hardware: MK-B-7A

Orifice: No. of Holes 3; Dia. of Holes 0.162

Lower Adapter: EB-1-50448-D

Flow Test Data: 13 gpm in row 2

Date Assembled: 11/20/74; Location FASB

Date Loaded in Reactor: 12/7/74; for Run 75A

Initial Grid Position: 2F1

Pos.	Sponsor	Ident. No.	Pos.	Ident. No.	Sponsor
1	HEDL	ZP-7-46	32	ZP-8-18	HEDL
2		" -44	33	ZP-5-11	
3		" -42	34	ZPD-99-1	
4		" -40	35	ZP-5-01	
5		" -38	36	ZP-7-45	
6		" -47	37	ZP-5-21	
7		ZPD-99-2	38	ZPD-245-2	
8		ZP-5-20	39	ZP-9-05	
9		" -18	40	ZP-8-19	
10		ZPD-51-1	41	ZPD-2-1	
11		ZP-5-14	42	ZP-5-06	
12		ZP-7-48	43	ZP-5-02	
13		ZP-5-22	44	ZP-7-43	
14		ZP-8-23	45	ZP-5-19	
15		ZPD-342-1	46	ZP-8-21	
16		ZP-5-17	47	ZPD-245-1	
17		" -15	48	ZP-5-12	
18		" -09	49	" -07	
19		ZP-7-49	50	" -03	
20		ZP-5-23	51	ZP-7-41	
21		ZPD-342-2	52	ZPD-196-1	
22		ZP-9-06	53	ZP-5-16	
23		ZP-8-20	54	" -13	
24		ZPD-2-2	55	ZPD-293-1	
25		ZP-5-10	56	ZP-5-04	
26		" -05	57	ZP-7-39	
27		ZP-8-25	58	" -37	
28		ZP-5-24	59	" -36	
29		ZP-8-24	60	" -35	
30		ZP-8-22	61	" -34	
31		ZPD-148-1			

Subassembly No. X224

Type Hardware: MK-B-61A

Orifice: No. of Holes 7; Dia. of Holes 0.228

Lower Adapter: EB-1-50552

Flow Test Data: 46.5 gpm in row 6 @ 45.3 psi

Date Assembled: 11/7/74; Location FASB

Date Loaded in Reactor: 12/7/74; for Run 75

Initial Grid Position: 6A2

Note:

All elements except ZPD (dummies) contain UO_2 - 25 wt % PuO_2 . Enrichments are: ZP-5 elements, 58%; ZP-7, 79%; ZP-8, 89%; ZP-9, 93%.

Pos.	Sponsor	Ident. No.	Pos.	Ident. No.	Sponsor
1	HEDL	ZP-7-16	32	ZP-8-04	HEDL
2		" 7-12	33	" 8-02	
3		ZPD-196-2	34	ZPD-245-3	
4		ZP-7-05	35	ZP-7-04	
5		" 7-01	36	ZP-7-26	
6		" 7-18	37	ZP-8-14	
7		ZPD-51-2	38	ZPD-342-4	
8		ZP-7-13	39	AP-8-09	
9		" 7-09	40	ZP-9-01	
10		ZPD-2-3	41	ZPD-245-4	
11		ZP-7-02	42	ZP-7-10	
12		ZPD-51-3	43	ZP-7-08	
13		ZP-7-19	44	ZP-7-27	
14		ZP-8-06	45	ZP-8-15	
15		ZPD-2-5	46	ZP-8-12	
16		ZP-8-01	47	ZPD-245-5	
17		ZP-7-06	48	ZP-8-08	
18		ZPD-293-2	49	ZP-7-14	
19		ZP-7-23	50	" 7-11	
20		" 7-21	51	" 7-28	
21		ZPD-342-3	52	ZPD-148-3	
22		ZP-8-C7	53	ZP-8-13	
23		" 8-C3	54	" 8-10	
24		ZPD-2-4	55	ZPD-293-3	
25		ZP-7-07	56	ZP-7-15	
26		" 7-03	57	" 7-29	
27		" 7-25	58	" 7-24	
28		ZPD-342-5	59	" 7-22	
29		ZP-8-11	60	" 7-20	
30		ZP-9-02	61	" 7-17	
31		ZPD-148-2			

Note:

For content, see Note for X224.

Subassembly No. X225

Type Hardware: MK-B-61A

Orifice: No. of Holes 7; Dia. of Holes 0.228

Lower Adapter: EB-1-50552

Flow Test Data: 47.5 gpm in row 6 @ 45.3 psi

Date Assembled: 11/8/74; Location FASB

Date Loaded in Reactor: 12/7/74; for Run 75

Initial Grid Position: 6C2

Pos.	Sponsor	Ident. No.	Pos.	Ident. No	Sponsor
1	HEDL	ZP-5-28	32	ZP-9-10	HEDL
2		" 5-29	33	" 8-32	
3		ZPD-196-3	34	ZPD-99-4	
4		ZP-5-47	35	ZP-7-59	
5		" 5-48	36	" 7-60	
6		" 5-30	37	" 5-40	
7		" 5-31	38	ZPD-342-6	
8		" 5-32	39	ZP-9-11	
9		" 5-49	40	" 8-33	
10		ZPD-293-4	41	ZPD-245-7	
11		ZP-7-56	42	ZP-5-41	
12		ZPD-196-4	43	" 7-61	
13		ZP-5-33	44	" 7-62	
14		" 5-34	45	" 5-42	
15		ZPD-2-6	46	" 8-34	
16		ZP-8-28	47	ZPD-342-7	
17		" 5-35	48	ZP-8-35	
18		" 7-57	49	" 5-43	
19		" 5-36	50	" 7-63	
20		" 5-37	51	" 7-64	
21		ZPD-2-7	52	ZPD-51-4	
22		ZP-9-09	53	ZP-5-44	
23		" 8-29	54	" 5-45	
24		ZPD-245-6	55	" 5-46	
25		" 5-38	56	" 7-65	
26		" 7-58	57	" 7-66	
27		" 5-39	58	" 7-67	
28		ZPD-99-3	59	" 7-53	
29		" 8-30	60	" 7-54	
30		" 8-31	61	" 7-55	
31		ZPD-148-4			

Subassembly No. X226

Type Hardware: MK-B-61A

Orifice: No. of Holes 7; Dia. of Holes 0.228

Lower Adapter: EB-1-50552

Flow Test Data: 47.5 gpm in row 6 @ 45.3 psi

Date Assembled: 11/11/74; Location FASB

Date Loaded in Reactor: 12/7/74; for Run 75

Initial Grid Position: 6E2

Note:

For content, see Note for X224.

Position	Sponsor	Ident. No.	Comments
1	HEDL	P23C-74G	
2		C-32B	
3		B-60C	
4		B-76E	
5		C-33B	
6		C-51C	
7		B-67D	
8		B-21A	
9		C-75G	
10		B-68D	
11		C-52C	
12		C-17A	
13		C-18A	
14		C-76G	
15		B-69D	
16		C-34B	
17		C-53C	
18		B-22A	
19		C-19A	
20		C-20A	
21		C-21A	
22		C-77G	
23		C-35B	
24		C-66E	
25		B-23A	
26		B-44B	
27		C-22A	
28		C-78G	
29		B-61C	
30		C-55C	
31		B-81C	
32		C-54C	
33		B-70D	
34		B-78E	
35		B-77E	
36		B-82C	
37		B-79E	

Subassembly No. X227

Type Hardware: MK-J-37B

Lower

Orifice: No. of Holes 7; Dia. of Holes 0.228

Lower Adapter: EB-1-50448

Flow Test Data: 59 gpm in row 3 @ 43 psi

Date Assembled: 11/12/74; Location FASB

Date Loaded in Reactor: 12/7/74; for Run 75

Initial Grid Position: 3E1

Notes:

1. Upper orifice plate per EB-1-50778 with seven 0.219" holes.
2. Sfield per EB-1-50779 with six 0.281" holes.

3. All elements contain UO_2 - 25 wt % PuO_2 fuel; uranium 65% enriched.

<u>Position</u>	<u>Sponsor</u>	<u>Ident. No.</u>	<u>Comments</u>
1	NRL	E-6	Structural

Subassembly No. X228

Type Hardware: MK-M-1A

Orifice: No. of Holes 3; Dia. of Holes 0.162

Lower Adapter EE-1-50560D

Flow Test Data: 6.8 gpm in row 8

Date Assembled 1/27/75; Location FASB

Date Loaded in Reactor: 2/17/75; for Run 76

Initial Grid Position 8E4

Pos.	Sponsor	Ident. No.	Pos.	Sponsor	Ident. No.
1	HEDL	P14-1	32	HEDL	P14-37
2		-2	33		-38
3		-3	34		-39
4		-4	35		-40
5		-5	36		-41
6		-6	37		-42
7		-7	38		-43
8		-8	39		-52
9		-60	40		-19
10		-10	41		-44
11		-11	42		-53
12		-12	43		-45
13		-13	44		-46
14		-72	45		-54
15		-15	46		-55
16		-16	47		-14
17		-17	48		-56
18		-18	49		-57
19		-26	50		-58
20		-27	51		-47
21		-28	52		-59
22		-20	53		-9
23		-69	54		-61
24		-29	55		-62
25		-30	56		-63
26		-31	57		-64
27		-32	58		-65
28		-33	59		-67
29		-71	60		-68
30		-35	61		-70
31		-36			

Notes:

1. Elements have a 0.042" wire wrap on a 12" pitch.
2. Elements contain UO_2 -25 wt % PuO_2 fuel; uranium 79% enriched.
3. Subassembly uses HEDL-supplied 316 SS hex having no hash marks.

Subassembly No. X230

Type Hardware: MK-B-61A

Orifice: No. of Holes 7; Dia. of Holes 0.404

Lower Adapter: EB-1-50448

Flow Test Data: 81 gpm in row 4 @ 38.5 psi

Date Assembled: 11/19/74; Location FASB

Date Loaded in Reactor: 12/7/74; for Run 75

Initial Grid Position: 4E3

Position	Sponsor	Ident. No.	Comments
1	GE	E1H-37	UO ₂ -25 wt % PuO ₂
2	"	E1H-35	"
3	"	E1H-38	"
4	LASL	BMI2-1	(U _{.80} -Pu _{.20})N
5	"	BMI1-4	"
6	GE	F5A	UO ₂ -25 wt % PuC ₂
7	"	F5C	"
8	LASL	BMI3-8	(U _{.80} -Pu _{.20})N
9	"	W-12-F	(U _{.80} -Pu _{.20})C
10	"	BMI2-5	(U _{.80} -Pu _{.20})N
11	"	K-39B	(U _{.80} -Pu _{.20})C
12	"	BMI3-6	(U _{.80} -Pu _{.20})N
13	"	W-10-F	(U _{.80} -Pu _{.20})C
14	"	W-3-F	"
15	"	W-5-F	"
16	"	W-7-F	"
17	"	UNC-260	(U _{.85} -Pu _{.15})C
18	"	UNC-262	"
19	"	UNC-203	"

Subassembly No. X233

Type Hardware: MK-A-19A

Orifice: No. of Holes 7; Dia. of Holes 0.250

Lower Adapter: EB-1-50448

Flow Test Data: ~ 51 gpm in row 5 @ 37.6 psi

Date Assembled: 1/23/75; Location HFEF

Date Loaded in Reactor: 3/7/75; for Run 76D

Initial Grid Position: 5F2

Note:

Fuel composition as noted; uranium ~ 93% enriched.

Position	Sponsor	Ident. No.	Comments
1	HEDL	BCM3-1	Absorber
2		BCM3-6	
3		BCM3-5	
4		BCM3-2	
5		BCM3-10	
6		BCM3-9	
7		BCM3-7	

Subassembly No. X234

Type Hardware: MK-B-7A

Orifice: No. of Holes 3; Dia. of Holes 0.162

Lower Adapter: EB-1-50552-D

Flow Test Data: 15.2 gpm in row 7

Date Assembled: 12/6/74; Location FASB

Date Loaded in Reactor: 1/9/75; for Run 75D

Initial Grid Position: 7E5

Note:

Content is 91 unirradiated MK II driver-fuel elements produced in the ANL cold line.

Subassembly No. X235

Type Hardware: Standard 91-pin Mark II Driver

Orifice: No. of Holes 1; Dia. of Holes 0.781

Lower Adapter E3-1-51538

Flow Test Data: 62 gpm in row 6 @ 45.3 psi

Date Assembled: 1/27/75; Location FASB

Date Loaded in Reactor: 2/17/75; for Run 76

Initial Grid Position: 6C3

Position	Sponsor	Ident. No.	Comments
1		Dummy	
2		↓	
3			
4	HEDL		Structural
5			Dummy
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			

Subassembly No. X236

Type Hardware: MK-B-19

Orifice: No. of Holes 1 center 0.375
3 radial; Dia. of Holes 0.214

Lower Adapter: EB-1-50448-D

Flow Test Data: 17.5 gpm in row 2

Date Assembled: 12/16/74; Location FASB

Date Loaded in Reactor: 1/9/75; for Run 75D

Initial Grid Position: 2D1

Position	Sponsor	Ident. No.	Comments
1		Dummy	
2	HEDL	BB-1	Structural
3		Dummy	
4			
5			
6			
7			
8			
9			
10	HEDL	BB-2	Structural
11		Dummy	
12			
13			
14			
15			
16			
17			
18	HEDL	BC-1	Structural
19		Dummy	

Subassembly No. X237

Type Hardware: MK-3-19

Orifice: No. of Holes 1 center 0.375
3 radial; Dia. of Holes 0.214

Lower Adapter: EB-1-50448-D

Flow Test Data: 16.5 gpm in row 4

Date Assembled: 12/16/74; Location FASB

Date Loaded in Reactor: 1/9/75; for Run 75D

Initial Grid Position: 4C3

Position	Sponsor	Ident. No.	Comments
1		Dummy	
2		↓	
3		↓	
4	HEDL	BB-3	Structural
5		Dummy	
6		↓	
7		↓	
8		↓	
9		↓	
10	HEDL	BB-4	Structural
11		Dummy	
12		↓	
13		↓	
14		↓	
15		↓	
16	HEDL	BE-1	Structural
17		Dummy	
18		↓	
19		↓	

Subassembly No. X238

Type Hardware: MK-B-19

Orifice: No. of Holes 1 center 0.375
3 radial; Dia. of Holes 0.214

Lower Adapter: EB-1-50448-D

Flow Test Data: 16.5 gpm in row 4

Date Assembled: 12/16/74; Location FASB

Date Loaded in Reactor: 1/9/75; for Run 75D

Initial Grid Position: 4E1

Position	Sponsor	Ident. No.	Comments
1		Dummy	
2		↓	
3	HEDL	BF-1	Structural
4		Dummy	
5		↓	
6		↓	
7		↓	
8		↓	
9		↓	
10	HEDL	BG-1	Structural
11		Dummy	
12		↓	
13		↓	
14		↓	
15		↓	
16		↓	
17	HEDL	BH-1	Structural
18		Dummy	
19		↓	

Subassembly No. X239

Type Hardware: MK-B-19

Orifice: No. of Holes 1 center 0.375
3 radial; Dia. of Holes 0.214

Lower Adapter: EB-1-50552-D

Flow Test Data: 17.8 gpm in row 7

Date Assembled: 12/17/74; Location FASB

Date Loaded in Reactor: 1/9/75; for Run 75D

Initial Grid Position: 7F4

Position	Sponsor	Ident. No.	Comments
1		Dummy	
2		↓	
3	HEDL	BF-2	Structural
4		Dummy	
5		↓	
6		↓	
7		↓	
8		↓	
9		↓	
10	HEDL	BG-2	Structural
11		Dummy	
12		↓	
13		↓	
14		↓	
15		↓	
16		↓	
17	HEDL	BJ-1	Structural
18		Dummy	
19		↓	

Subassembly No. X243

Type Hardware: MK-B-19

Orifice: No. of Holes 1 center 0.375
3 radial; Dia. of Holes 0.214

Lower Adapter: EB-1-50560-D

Flow Test Data: 7.6 gpm in row 8

Date Assembled: 12/17/74; Location FASB

Date Loaded in Reactor: 1/9/75; for Run 75D

Initial Grid Position: 8F4

Position	Sponsor	Ident. No.	Comments
1		Dummy	
2		↓	
3	HEDL	BK-1	Structural
4		Dummy	
5		↓	
6		↓	
7		↓	
8		↓	
9		↓	
10	HEDL	EG-3	Structural
11		Dummy	
12		↓	
13		↓	
14		↓	
15		↓	
16		↓	
17	HEDL	BK-2	Structural
18		Dummy	
19		↓	

Subassembly No. X244

Type Hardware: MK-B-19

Orifice: No. of Holes 1 center 0.375
3 radial; Dia. of Holes 0.214

Lower Adapter: EB-1-50560-D

Flow Test Data: 7.7 gpm in row 8

Date Assembled: 12/17/74; Location FASB

Date Loaded in Reactor: 1/9/75; for Run 75D

Initial Grid Position: 8F6

Pos.	Sponsor	Ident. No.	Pos.	Sponsor	Ident. No.
1	ANL	*	32	ANL	53531
2		33051	33		35467
3		32375	34		33828
4		31437	35		31067
5		53583	36		31086
6		*	37		33077
7		31048	38		31553
8		32205	39		34451
9		35127	40		34224
10		31128	41		53503
11		31091	42		31098
12		53619	43		36559
13		33822	44		***
14		34407	45		34196
15		32969	46		53556
16		53496	47		32964
17		35732	48		32203
18		35737	49		31181
19		32151	50		53533
20		31277	51		31083
21		53516	52		32208
22		31586	53		35462
23		33825	54		35165
24		31082	55		32388
25		32987	56		34677
26		34558	57		53589
27		32962	58		32383
28		34449	59		32197
29		**	60		31438
30		35089	61		34466
31		53067			

*Conduit tubes for flowmeter leads.

**Passive thermal monitors.

***Self-powered detectors.

Subassembly No. XX07

Type Hardware: INSAT

Orifice: No. of Holes N/A; Dia. of Holes N/A

Lower Adapter: N/A

Flow Test Data: 56 gpm in row 5

Date Assembled: 4/19/74; Location ANL-East

Date Loaded in Reactor: 5/15/74; for Run 71A

Initial Grid Position: 5D3

Note:

Unless otherwise indicated, all elements contain MK-IA fuel.

Subassembly No. YY03
Type Hardware: INCOT
Orifice: No. of Holes N/A; Dia. of Holes N/A
Lower Adapter: N/A
Flow Test Data: ~ 14 gpm in row 5
Date Assembled: 6/74; Location HEDL
Date Loaded in Reactor: 10/4/74; for Run 74A
Initial Grid Position: 5A3

Note: Sponsor, HEDL. Experiment consists of four neutron sensors, two self-powered types and two gas-flow types, each instrumented for measurement of temperature and sensor output.

Subassembly No. YY05
Type Hardware: INCOT
Orifice: No. of Holes N/A ; Dia. of Holes N/A
Lower Adapter: N/A
Flow Test Data: ~ 0.25 gpm in row 5
Date Assembled: 9/74 ; Location ANL-East
Date Loaded in Reactor: 12/10/74 ; for Run 75A
Initial Grid Position: 5A3

Note: Sponsor, ANL. Experiment consists of six microphones, each instrumented for measurement of temperature and acoustic output.