LOADING DIAGRAMS OF EXPERIMENTAL SUBASSEMBLIES

IRRADIATED IN EBR-II RUNS 5 THROUGH 42

Compiled by

J. C. Case

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EBR-II Project

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LOADING DIAGRAMS OF EXPERIMENTAL SUBASSEMBLIES

IRRADIATED IN EBR-II RUNS 5 THROUGH 42

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INTRODUCTION

This report contains the loading diagrams for all experimental sub-assemblies as they were fabricated for irradiation in EBR-II runs 5 through 42. (The first experimental subassembly was irradiated in run 5.) 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.)

The following loading diagrams are included in this report in the order shown:

XA01	X015	X026	X040A	X054	X067
XG01	X016	X027	X041	X055	X068
XG02	X017	X028	X042	X056	X069
XG03	X018	X029	X042A	X057	X070
XG04	X018A	X030	X042B	X058	X071
XG05	X018B	X031	X043	X059	X072
XG06	X019	X032	X044	X060	X073
XA07	X020	X033	X045	X061	X074
XA08	X021	X034	X046	X062	X075
X009	X021A	X034A	X047	X063	X076
X010	X021B	X035	X048	X064	X077
X011	X021C	X036	X049	X065	X078
X012	X022	X037	X050	X065A	X079
X012A	X023	X038	X051	X065B	XX01
X013	X024	X039	X052	X065C	XX02
X014	X025	X040	X053	X066	X900

*An "FCF" location designates assembly in the air cell of the Fuel Cycle Facility at the EBR-II site. An "ITF" location designates assembly in the Inspection and Test Facility at the EBR-II site.

Position	Sponsor	Ident. No.	Comments
1	ANL	C93	Metal Fuel
2		CD01	
3		CG02	
4		C97	
5		CM01	
6		PB02	
7		CB02	
8		C98	
9		C101	
10		PA01	
11		CB04	
12		CA01	
13		C99	
14		CJ01	
15		LA02	
16		CB03	
17		C100	
18		CD02	
19		CG03	

Subassembly No. XA01

Type Hardware: MK-A-19

Orifice: No. of Holes 1; Dia of Holes 0.296

Lower Adapter Modifications: None

Flow Test Data: 11.8 gpm in row 6

Date Assembled: 4- 6-65; Location ANL-I11.

Date Loaded in Reactor: 5- 6-65; for Run 5

Initial Grid Position: 6D2

Position	Sponsor	Ident. No.	Comments
1	GE	F1D	Oxide Fuel
2	GE	PLA	Structural
3	GE	F1E	Oxide Fuel
4	---	Dummy	SS Shroud
5	---	Dummy	SS Shroud
6	GE	F1B	Oxide Fuel
7	GE	PLB	Structural
8	GE	MT1	Structural
9	---	Dummy	SS Shroud
10	GE	F1C	Oxide Fuel
11	---	Dummy	SS Shroud
12	GE	F1A	Oxide Fuel
13	---	Dummy	SS Shroud
14	---	Dummy	SS Shroud
15	---	Dummy	SS Shroud
16	---	Dummy	SS Shroud
17	GE	F1F	Oxide Fuel
18	---	Dummy	SS Shroud
19	GE	MT2	Structural

Subassembly No. XG01

Type Hardware: MK-A-19

Orifice: No. of Holes 1; Dia of Holes 0.469

Lower Adapter Modifications: None

Flow Test Data: 20.5 gpm in row 4

Date Assembled: 4- 6-65; Location ANL-111.

Date Loaded in Reactor: 5- 6-65; for Run 5

Initial Grid Position: 4F2

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

Subassembly No. XG02

Type Hardware: MK-A-19

Orifice: No. of Holes 1; Dia of Holes 0.407

Lower Adapter Modifications: None

Flow Test Data: 16.5 gpm in row 7

Date Assembled: 7-7-65; Location ANL-III.

Date Loaded in Reactor: 7-16-65; for Run 7

Initial Grid Position: 7A1

Position	Sponsor	Ident. No.	Comments
1		Dummy	
2		Dummy	
3		Dummy	
4		Dummy	
5		Dummy	
6		Dummy	
7		Dummy	
8		Dummy	
9	GE	FOA	Oxide Fuel
10		Dummy	
11		Dummy	
12		Dummy	
13		Dummy	
14		Dummy	
15	GE	FOC	Oxide Fuel
16		Dummy	
17		Dummy	
18		Dummy	
19		Dummy	

Subassembly No. XG03

Type Hardware: MK-A-19

Orifice: No. of Holes 1; Dia of Holes 0.407

Lower Adapter Modifications: None

Flow Test Data: 16.0 gpm in row 7

Date Assembled: 7-7-65; Location ANL-111.

Date Loaded in Reactor: 7-16-65; for Run 7

Initial Grid Position: 7D1

Position	Sponsor	Ident. No.	Comments
1		Dummy	
2		Dummy	
3		Dummy	
4		Dummy	
5	GE	FOB	Oxide Fuel
6		Dummy	
7		Dummy	
8		Dummy	
9		Dummy	
10		Dummy	
11	GE	FOD	Oxide Fuel
12		Dummy	
13		Dummy	
14		Dummy	
15		Dummy	
16		Dummy	
17		Dummy	
18		Dummy	
19		Dummy	

Subassembly No. XG04

Type Hardware: MK-A-19

Orifice: No. of Holes 1; Dia of Holes 0.407

Lower Adapter Modifications: None

Flow Test Data: 16.5 gpm in row 7

Date Assembled: 7- 7-65; Location ANL-III.

Date Loaded in Reactor: 7-16-65; for Run 7

Initial Grid Position: 7B1

Position	Sponsor	Ident. No.	Comments
1	GE	L-2-E	Structural
2	ANL	SMV-2	Carbide Fuel
3	GE	F-2-X	Oxide Fuel
4	GE	F-2-R	Oxide Fuel
5	ANL	HMV-5	Carbide Fuel
6	GE	L-2-G	Structural
7	ANL	ND-24	Metal Fuel
8	GE	F-2-G	Oxide Fuel
9	GE	F-2-C	Oxide Fuel
10	GE	F-2-O	Oxide Fuel
11	ANL	NMV-11	Carbide Fuel
12	ANL	NC-17	Metal Fuel
13	GE	L-2-A	Structural
14	GE	F-2-H	Oxide Fuel
15	GE	F-2-D	Oxide Fuel
16	GE	L-2-I	Structural
17	GE	F-2-V	Oxide Fuel
18	GE	L-2-C	Structural
19	GE	F-2-T	Oxide Fuel

Subassembly No. XG05

Type Hardware: MK-A-19

Orifice: No. of Holes 1; Dia of Holes 0.750

Lower Adapter Modifications: Row-5 holes 0.314

Flow Test Data: 50.5 gpm in row 4

Date Assembled: 8-27-65; Location ANL-111.

Date Loaded in Reactor: 9- 3-65; for Run 8

Initial Grid Position: 4C2

Position	Sponsor	Ident. No.	Comments
1	GE	F-2-U	Oxide
2	GE	L-2-K	Structural
3	ANL	NC-23	Metal
4	GE	F-2-Z	Oxide
5	GE	F-2-S	Oxide
6	GE	F-2-F	Oxide
7	GE	F-2-Q	Oxide
8	GE	L-2-M	Structural
9	GE	F-2-N	Oxide
10	GE	F-2-P	Oxide
11	GE	F-2-A	Oxide
12	ANL	ND-23	Metal
13	GE	F-2-E	Oxide
14	GE	F-2-B	Oxide
15	GE	L-2-P	Structural
16	GE	L-2-Q	Structural
17	GE	L-2-O	Structural
18	GE	F-2-W	Oxide
19	GE	F-2-Y	Oxide

Subassembly No. XG06

Type Hardware: MK-A-19

Orifice: No. of Holes 1; Dia of Holes 0.750

Lower Adapter Modifications: Row-5 holes 0.314

Flow Test Data: 50.5 gpm in row 4

Date Assembled: 8-27-65; Location ANL-I11.

Date Loaded in Reactor: 9- 3-65; for Run 8

Initial Grid Position: 4E2

Position	Sponsor	Ident. No.	Comments
1	ANL	ND39	Metal Fuel
2		ND44	Metal Fuel
3		ND27	Metal Fuel
4		ND37	Metal Fuel
5		ND28	Metal Fuel
6		ND43	Metal Fuel
7		ND25	Metal Fuel
8		ND30	Metal Fuel
9		ND35	Metal Fuel
10		ND41	Metal Fuel
11		ND32	Metal Fuel
12		ND26	Metal Fuel
13		ND34	Metal Fuel
14		ND31	Metal Fuel
15		AS9	Structural
16		AS10	Structural
17		ND33	Metal Fuel
18		ND29	Metal Fuel
19		AS11	Structural

Subassembly No. XAO7

Type Hardware: MK-A-19

Orifice: No. of Holes 1; Dia of Holes 0.365

Lower Adapter Modifications: Row 4 holes 0.314

Flow Test Data: 15.3 gpm in row 4

Date Assembled: 10-19-65; Location ANL-III.

Date Loaded in Reactor: 10-27-65; for Run 10

Initial Grid Position: 4D3

Position	Sponsor	Ident. No.	Comments
1	ANL	NMV-4	Carbide Fuel
2	ANL	NMP-1	Carbide Fuel
3	ANL	NMP-2	Carbide Fuel
4	ANL	AS-1	Structural
5	ANL	HMV-4	Carbide Fuel
6	ANL	HWMV-1	Carbide Fuel
7	ANL	NMV-12	Carbide Fuel
8	ANL	AS-2	Structural
9	ANL	AS-3	Structural
10	ANL	AS-4	Structural
11	ANL	AS-5	Structural
12	ANL	AS-6	Structural
13	GE	MT-3	Structural
14	GE	MT-4	Structural
15	ANL	AS-7	Structural
16	ANL	AS-8	Structural
17	ANL	HMV-1	Carbide Fuel
18	ANL	AS-12	Structural
19	ANL	NMV-7	Carbide Fuel

Subassembly No. XA08

Type Hardware: MK-A-19

Orifice: No. of Holes 1; Dia of Holes 0.750

Lower Adapter Modifications: Row-5 holes 0.314

Flow Test Data: 50 gpm in row 4

Date Assembled: 12- 3-65; Location ANL-I11.

Date Loaded in Reactor: 12-13-65; for Run 13

Initial Grid Position: 4F2

Position	Sponsor	Ident. No.	Comments
1	ANL	AS-27	Structural
2	GE	L-4-C	Structural
3	ANL	SP-13	Cermet Fuel
4	PNL	A1	Structural
5	ANL	SOV-6	Oxide Fuel
6	UNC	UNC-80	Carbide Fuel
7	UNC	UNC-79	Carbide Fuel
8	ANL	SMV-1	Carbide Fuel
9	PNL	A5	Structural
10	ANL	AS-14	Structural
11	ANL	SP-14	Cermet Fuel
12	ANL	VMV-1	Carbide Fuel
13	ANL	SOV-5	Oxide Fuel
14	PNL	A2	Structural
15	ANL	AS-15	Structural
16	ANL	SMP-1	Carbide Fuel
17	GE	L-4-D	Structural
18	PNL	A6	Structural
19	UNC	UNC-78	Carbide Fuel

Subassembly No. X009

Type Hardware: MK-A-19

Orifice: No. of Holes 1; Dia of Holes 0.750

Lower Adapter Modifications: row-5 holes 0.314

Flow Test Data: 49.5 gpm in row 4

Date Assembled: 3-11-66; Location ANL-111.

Date Loaded in Reactor: 3-24-66; for Run 15

Initial Grid Position: 4A2

Position	Sponsor	Ident. No.	Comments
1	PNL	A3	Structural
2	GE	F-O-J	Oxide Fuel
3	GE	F-O-M	Oxide Fuel
4	PNL	A4	Structural
5	PNL	A7	Structural
6	GE	F-O-K	Oxide Fuel
7	GE	F-O-L	Oxide
8	ANL	AS-26	Structural
9	PNL	A8	Structural
10	ANL	AS-20	Structural
11	ANL	AS-21	Structural
12	ANL	AS-23	Structural
13	ANL	AS-16	Structural
14	ANL	AS-17	Structural
15	ANL	AS-22	Structural
16	ANL	AS-24	Structural
17	ANL	AS-18	Structural
18	ANL	AS-19	Structural
19	ANL	AS-25	Structural

Subassembly No. X010

Type Hardware: MK-A-19

Orifice: No. of Holes 1; Dia of Holes 0.407

Lower Adapter Modifications: None

Flow Test Data: 16.3 gpm in row 7

Date Assembled: 3-11-66; Location ANL-111.

Date Loaded in Reactor: 3-24-66; for Run 15

Initial Grid Position: 7F3

Position	Sponsor	Ident. No.	Comments
1	GE	F-4-J	Oxide Fuel
2	ANL	SOV-3	Oxide Fuel
3	GE	F-4-E	Oxide Fuel
4	GE	F-4-D	Oxide Fuel
5	GE	F-4-H	Oxide Fuel
6	ANL	HOV-4	Oxide Fuel
7	PNL	5P-12	Cermet Fuel
8	ANL	TVOV-1	Oxide Fuel
9	GE	F-4-L	Oxide Fuel
10	GE	F-4-F	Oxide Fuel
11	PNL	5U-14	Cermet Fuel
12	PNL	5P-9	Cermet Fuel
13	ANL	SOV-7	Oxide Fuel
14	GE	F-4-K	Oxide Fuel
15	GE	F-4-G	Oxide Fuel
16	ANL	SOV-1	Oxide Fuel
17	ANL	HOV-10	Oxide Fuel
18	GE	F-4-A	Oxide Fuel
19	ANL	HOV-15	Oxide Fuel

Subassembly No. X011

Type Hardware: MK-A-19

Orifice: No. of Holes 1; Dia of Holes 0.750

Lower Adapter Modifications: Row 5 holes 0.314

Flow Test Data: 59 gpm in row 2

Date Assembled: 4-29-66; Location ANL-111

Date Loaded in Reactor: 5-9-66; for Run 17

Initial Grid Position: 2F1

Position	Sponsor	Ident. No.	Comments
1	NUMEC	C-2	Oxide Fuel
2		C-13	
3		C-19	
4		C-4	
5		C-10	
6		C-18	
7		C-14	
8		C-6	
9		C-15	
10		C-17	
11		C-11	
12		D-5	
13		C-12	
14		C-16	
15		C-9	
16		C-3	
17		C-7	
18		C-8	
19		C-1	

Subassembly No. X012

Type Hardware: MK-A-19

Orifice: No. of Holes 1; Dia. of Holes 0.750

Lower Adapter Modifications: Row-5 holes 0.314

Flow Test Data: 52 gpm in row 4

Date Assembled: 8- 2-66; Location ANL-I11.

Date Loaded in Reactor: 8-10-66; for Run 21

Initial Grid Position: 4B2

Position	Sponsor	Ident. No.	Comments
1	NUMEC	C-2	Oxide Fuel
2		C-13	
3		C-19	
4		C-4	
5		C-10	
6		C-18	
7		C-14	
8		C-6	
9		C-15	
10		C-17	
11		C-11	
12		D-5	
13		C-12	
14		C-16	
15		C-9	
16		C-3	
17		C-7	
18		C-8	
19		C-1	

Subassembly No. X012A

Type Hardware: MK-A-19

Orifice: No. of Holes 1; Dia of Holes 0.750

Lower Adapter Modifications: Row-5 holes 0.314

Flow Test Data: ~52 gpm in row 4

Date Assembled: 10- 7-69; Location ECF

Date Loaded in Reactor: 12-13-69; for Run 39A

Initial Grid Position: 4B2

Position	Sponsor	Ident. No.	Comments
1	ANL	AS-45	Structural
2	ANL	AS-35	Structural
3	ANL	AS-36	Structural
4	ANL	AS-55	Structural
5	ANL	AS-54	Structural
6	ANL	AS-44	Structural
7	ANL	AS-42	Structural
8	ANL	AS-38	Structural
9	ANL	AS-39	Structural
10	PNL	BG-1	Graphite
11	ANL	AS-43	Structural
12	ANL	AS-41	Structural
13	ANL	AS-40	Structural
14	ANL	AS-49	Structural
15	ANL	AS-34	Structural
16	ANL	AS-37	Structural
17	ANL	AS-47	Structural
18	ANL	AS-48	Structural
19	ANL	AS-46	Structural

Subassembly No. X013

Type Hardware: MK-A-19

Orifice: No. of Holes 1; Dia of Holes 0.296

Lower Adapter Modifications: None

Flow Test Data: 11.5 gpm in row 3

Date Assembled: 7-11-66; Location ANL-111.

Date Loaded in Reactor: 7-17-66; for Run 20

Initial Grid Position: 3C1

Position	Sponsor	Ident. No.	Comments
1	PNL	A-11	Structural
2	GE	L-4-G	Structural
3	GE	L-4-E	Structural
4	GE	L-4-F	Structural
5	GE	L-4-B	Structural
6	PNL	BG2	Graphite
7	PNL	A-13	Structural
8	GE	L-4-A	Structural
9	PNL	A-10	Structural
10	PNL	A-12	Structural
11	GE	MT-5	Structural
12	NRL	NRL-5	Structural
13	PNL	A-9	Structural
14	PNL	BG3	Graphite
15	NRL	NRL-3	Structural
16	NRL	NRL-1	Structural
17	NRL	NRL-4	Structural
18	NRL	NRL-2	Structural
19	GE	MT-6	Structural

Subassembly No. X014

Type Hardware: MK-A-19

Orifice: No. of Holes 1; Dia of Holes 0.296

Lower Adapter Modifications: None

Flow Test Data: 11.6 gpm in row 2

Date Assembled: 7-11-66; Location ANL-111.

Date Loaded in Reactor: 7-17-66; for Run 20

Initial Grid Position: 2D1

Position	Sponsor	Ident. No.	Comments
1	GE	F-7-D	Oxide Fuel
2	NUMEC	B-9	Oxide Fuel
3	NUMEC	B-5	Oxide Fuel
4	ANL	BF-03	Metal Fuel
5	NUMEC	B-10	Oxide Fuel
6	NUMEC	B-6	Oxide Fuel
7	ANL	NMV-3	Carbide Fuel
8	ANL	TVMV-1	Carbide Fuel
9	NUMEC	B-11	Oxide Fuel
10	NUMEC	B-7	Oxide Fuel
11	ANL	HMV-2	Carbide Fuel
12	ANL	NMP-1	Carbide Fuel
13	ANL	BF-02	Metal Fuel
14	NUMEC	B-8	Oxide Fuel
15	NUMEC	B-3	Oxide Fuel
16	NUMEC	B-1	Oxide Fuel
17	GE	F-7-C	Oxide Fuel
18	NUMEC	B-4	Oxide Fuel
19	NUMEC	B-2	Oxide Fuel

Subassembly No. X015

Type Hardware: MK-A-19

Orifice: No. of Holes 1; Dia of Holes 0.750

Lower Adapter Modifications: Row-5 holes 0.314

Flow Test Data: 52 gpm in row 4

Date Assembled: 11-7-66; Location ITF

Date Loaded in Reactor: 11-15-66; for Run 23

Initial Grid Position: 4A2

Position	Sponsor	Ident. No.	Comments
1	ANL	AS-30	Structural
2	ANL	AS-31	Structural
3	ANL	AS-52	Structural
4	ANL	AS-50	Structural
5	ANL	AS-53	Structural
6	ANL	AS-33	Structural
7	ANL	AS-32	Structural
8	GE	L-10-A	Structural
9	ANL	AS-51	Structural
10	GE	L-10-B	Structural
11	ANL	AS-29	Structural
12	GE	L-10-C	Structural
13	GE	L-10-D	Structural
14	GE	L-10-G	Structural
15	GE	L-10-H	Structural
16	GE	L-10-F	Structural
17	GE	L-10-I	Structural
18	GE	L-10-E	Structural
19	GE	L-10-J	Structural

Subassembly No. X016

Type Hardware: MK-B-19

Orifice: No. of Holes 3 1; Dia of Holes 0.216
(in series) 0.375

Lower Adapter Modifications: None

Flow Test Data: 15.4 gpm in row 4

Date Assembled: 1-10-67; Location ITF

Date Loaded in Reactor: 1-13-67; for Run 25

Initial Grid Position: 4D3

Position	Sponsor	Ident. No.	Comments
1	NUMEC	A-4	Oxide Fuel
2	NUMEC	A-8	Oxide Fuel
3	NUMEC	A-11	Oxide Fuel
4	NUMEC	A-1	Oxide Fuel
5	NUMEC	A-3	Oxide Fuel
6	NUMEC	A-7	Oxide Fuel
7	NUMEC	A-10	Oxide Fuel
8	ANL	BF-04	Metal Fuel
9	ANL	BF-08	Metal Fuel
10	UNC	87	Carbide Fuel
11	NUMEC	A-6	Oxide Fuel
12	NUMEC	A-9	Oxide Fuel
13	UNC	89	Carbide Fuel
14	ANL	BF-05	Metal Fuel
15	ANL	BF-11	Metal Fuel
16	NUMEC	A-5	Oxide Fuel
17	UNC	90	Carbide Fuel
18	NUMEC	A-2	Oxide Fuel
19	ANL	BF-09	Metal Fuel

Subassembly No. X017

Type Hardware: MK-A-19

Orifice: No. of Holes 1; Dia of Holes 0.750

Lower Adapter Modifications: Row-5 holes 0.314

Flow Test Data: 52 gpm in row 4

Date Assembled: 11-7-66; Location ITF

Date Loaded in Reactor: 11-15-66; for Run 23

Initial Grid Position: 4C3

Position	Sponsor	Ident. No.	Comments
1	GE	C	Structural
2	ANL	AS-57	Structural
3	ANL	AS-56	Structural
4	ANL	AS-58	Structural
5	GE	B	Structural
6	GE	A	Structural
7	PNL	7-1	Structural

Subassembly No. X018

Type Hardware: MK-B-7

Orifice: No. of Holes 3; Dia of Holes 0.161

Lower Adapter Modifications: None

Flow Test Data: 12 gpm in row 2

Date Assembled: 12-3-66; Location ITF

Date Loaded in Reactor: 12-6-66; for Run 24

Initial Grid Position: 2B1

Position	Sponsor	Ident. No.	Comments
1	ANL	AS-58	Structural
2	GE	A	Structural
3	GE	B	Structural
4	GE	C	Structural
5	ANL	AS-56	Structural
6	PNL	BT-3	Thermocouple
7	PNL	BT-4	Thermocouple

Subassembly No. X018A

Type Hardware: MK-B-7

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

Lower Adapter Modifications: None

Flow Test Data: ~12 gpm in row 2

Date Assembled: 4-4-69 ; Location FCF

Date Loaded in Reactor: 4-23-69 ; for Run 34A

Initial Grid Position: 4E2

Position	Sponsor	Ident. No.	Comments
1	ANL	AS-58	Structural
2	GE	A	Structural
3	GE	B	Structural
4	GE	C	Structural
5	ANL	AS-56	Structural
6	ANL	A-61	Structural
7	PNL	B-40	Structural

Subassembly No. X018B

Type Hardware: MK-B-7

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

Lower Adapter Modifications: None

Flow Test Data: ~12 gpm in row 2

Date Assembled: 9-29-69; Location FCF

Date Loaded in Reactor: 10-2-69; for Run 38B

Initial Grid Position: 4E2

Position	Sponsor	Ident. No.	Comments
1	PNL	BG-5	Graphite
2	GE	F-8-G	Oxide Fuel
3	GE	F-8-C	Oxide Fuel
4	UNC	82	Carbide Fuel
5	PNL	A-28	Structural
6	GE	F-8-A	Oxide Fuel
7	GE	F-8-F	Oxide Fuel
8	UNC	81	Carbide Fuel
9	PNL	A-27	Structural
10	PNL	A-33	Structural
11	GE	F-8-B	Oxide Fuel
12	PNL	A-35	Structural
13	UNC	83	Carbide Fuel
14	PNL	A-29	Structural
15	GE	F-8-D	Oxide Fuel
16	PNL	A-34	Structural
17	PNL	A-26	Structural
18	PNL	A-32	Structural
19	GE	F-8-E	Oxide Fuel

Subassembly No. X019

Type Hardware: MK-A-19

Orifice: No. of Holes 1; Dia of Holes 0.562

Lower Adapter Modifications: None

Flow Test Data: 42 gpm in row 6

Date Assembled: 1-12-67; Location ITF

Date Loaded in Reactor: 1-13-67; for Run 25

Initial Grid Position: 6D2

Position	Sponsor	Ident. No.	Comments
1	PNL	A-15	Structural
2	PNL	A-14	Structural
3	GE	F-8-K	Oxide Fuel
4	GE	F-8-M	Oxide Fuel
5	GE	F-8-L	Oxide Fuel
6	GE	F-4-C	Oxide Fuel
7	GE	F-8-I	Oxide Fuel
8	GE	F-8-J	Oxide Fuel
9	GE	F-4-B	Oxide Fuel
10	GE	F-4-M	Oxide Fuel
11	ANL	AS-60	Structural
12	PNL	A-31	Structural
13	GE	F-8-P	Oxide Fuel
14	PNL	A-30	Structural
15	ANL	AS-59	Structural
16	UNC	86	Carbide Fuel
17	PNL	BG-9	Graphite
18	UNC	85	Carbide Fuel
19	UNC	84	Carbide Fuel

Subassembly No. X020

Type Hardware: MK-A-19

Orifice: No. of Holes 1; Dia of Holes 0.562

Lower Adapter Modifications: None

Flow Test Data: 42.5 gpm in row 6

Date Assembled: 1- 6-67; Location ITF

Date Loaded in Reactor: 1-13-67; for Run 25

Initial Grid Position: 6B5

Position	Sponsor	Ident. No.	Comments
1	PNL	7-2	Structural
2	PNL	7-3	Structural
3	PNL	7-4	Structural
4	PNL	7-8	Structural
5	PNL	7-5	Structural
6	PNL	7-6	Structural
7	PNL	7-7	Structural

Subassembly No. X021

Type Hardware: MK-B-7

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

Lower Adapter Modifications: None

Flow Test Data: 11.9 gpm in row 2

Date Assembled: 2-23-67 ; Location ITF

Date Loaded in Reactor: 2-25-67 ; for Run 25A

Initial Grid Position: 2D1

Position	Sponsor	Ident. No.	Comments
1	PNL	7-2	Structural
2	PNL	7-3	Structural
3	PNL	7-4	Structural
4	FNL	7-23	Structural
5	PNL	7-5	Structural
6	PNL	7-6	Structural
7	PNL	7-7	Structural

Subassembly No. X021A

Type Hardware: MK-B-7

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

Lower Adapter Modifications: None

Flow Test Data: ~12 gpm in row 2

Date Assembled: 9-24-68; Location FCF

Date Loaded in Reactor: 9-26-68; for Run 31A

Initial Grid Position: 2D1

Position	Sponsor	Ident. No.	Comments
1	PNL	7-2	Structural
2	PNL	7-3	Structural
3	PNL	7-4	Structural
4	PNL	7-24	Structural
5	PNL	7-5	Structural
6	PNL	7-6	Structural
7	PNL	7-7	Structural

Subassembly No. X021B

Type Hardware: MK-B-7

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

Lower Adapter Modifications: None

Flow Test Data: ~12 gpm in row 2

Date Assembled: 1-30-69; Location FCF

Date Loaded in Reactor: 2-23-69; for Run 33A

Initial Grid Position: 2D1

Position	Sponsor	Ident. No.	Comments
1	PNL	B-54	Structural; 0.790-in. dia
2	PNL	7-5	Structural
3	PNL	7-4	Structural
4	PNL	B-25	Structural 0.790-in. dia
5	PNL	B-56	Structural 0.790-in. dia
6	PNL	B-55	Structural 0.790-in. dia
7	PNL	7-7	Structural

Subassembly No. X021C

Type Hardware: MK-B-7

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

Lower Adapter Modifications: None

Flow Test Data: ~12 gpm in row 2

Date Assembled: 4-13-70; Location FCF

Date Loaded in Reactor: 4-17-70; for Run 42

Initial Grid Position: 2D1

Position	Sponsor	Ident. No.	Comments
1	PNL	7-9	Structural
2	PNL	7-10	Structural
3	PNL	7-11	Structural
4	PNL	7-15	Structural
5	PNL	7-12	Structural
6	PNL	7-13	Structural
7	PNL	7-14	Structural

Subassembly No. X022

Type Hardware: MK-B-7

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

Lower Adapter Modifications: None

Flow Test Data: 12.2 gpm in row 7

Date Assembled: 2-23-67 ; Location ITF

Date Loaded in Reactor: 3-21-67 ; for Run 25A

Initial Grid Position: 7C4

Position	Sponsor	Ident. No.	Comments
1	ORNL	F	Gamma Heat
2	ORNL	C	Gamma Heat
3	ORNL	G	Gamma Heat
4	ORNL	D	Gamma Heat
5	ORNL	A	Gamma Heat
6	ORNL	E	Gamma Heat
7	ORNL	B	Gamma Heat

Subassembly No. X023

Type Hardware: MK-B-7

Orifice: No. of Holes open ; Dia of Holes _____

Lower Adapter Modifications: None

Flow Test Data: 57 gpm in row 2

Date Assembled: 6-23-67 ; Location ITF

Date Loaded in Reactor: 7-21-67 ; for Run 25D

Initial Grid Position: 2B1

Position	Sponsor	Ident. No.	Comments
1	ORNL	H	Gamma Heat
2	ORNL	I	Gamma Heat
3	ORNL	J	Gamma Heat
4	ORNL	K	Gamma Heat
5	ORNL	L	Gamma Heat
6	ORNL	M	Gamma Heat
7	ORNL	N	Gamma Heat

Subassembly No. X024

Type Hardware: MK-B-7

Orifice: No. of Holes open ; Dia of Holes _____

Lower Adapter Modifications: None

Flow Test Data: 45 gpm in row 7

Date Assembled: 6-23-67 ; Location ITF

Date Loaded in Reactor: 7-21-67 ; for Run 25D

Initial Grid Position: 7D4

Position	Sponsor	Ident. No.	Comments
1	GE	NA	Structural
2		NC	
3		NE	
4		NG	
5		NJ	
6		NM	
7		NL	
8		NP	
9		NR	
10		NB	
11		ND	
12		NF	
13		NI	
14		NH	
15		NK	
16		NN	
17		NQ	
18		NS	
19		NO	

Subassembly No. X025

Type Hardware: MK-B-19

Orifice: No. of Holes 1 3; Dia of Holes 0.375
(In series) 0.216

Lower Adapter Modifications: None

Flow Test Data: 15.3 gpm in row 4

Date Assembled: 7-17-67; Location ITF

Date Loaded in Reactor: 10-10-67; for Run 26B

Initial Grid Position: 4E2

Position	Sponsor	Ident. No.	Comments
1	NRL	B-5	Structural
2	NRL	B-2	Structural
3	NRL	B-7	Structural
4	NRL	B-4	Structural
5	NRL	B-1	Structural
6	NRL	B-6	Structural
7	NRL	B-3	Structural

Subassembly No. X026

Type Hardware: MK-B-7

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

Lower Adapter Modifications: None

Flow Test Data: 12.1 gpm in row 7

Date Assembled: 7-18-67; Location ITF

Date Loaded in Reactor: 10-11-67; for Run 26B

Initial Grid Position: 7D5

Position	Sponsor	Ident. No.	Comments
1	GE	37	Oxide Fuel
2	GE	29	Oxide Fuel
3	GE	28	Oxide Fuel
4	GE	34	Oxide Fuel
5	GE	30	Oxide Fuel
6	GE	32	Oxide Fuel
7	GE	20	Oxide Fuel
8	GE	33	Oxide Fuel
9	GE	31	Oxide Fuel
10	GE	22	Oxide Fuel
11	PNL	A-40	Structural
12	GE	38	Oxide Fuel
13	GE	21	Oxide Fuel
14	GE	35	Oxide Fuel
15	GE	27	Oxide Fuel
16	GE	25	Oxide Fuel
17	GE	26	Oxide Fuel
18	GE	24	Oxide Fuel
19	GE	23	Oxide Fuel

Subassembly No. X027

Type Hardware: MK-A-19

Orifice: No. of Holes 1; Dia of Holes 0.562

Lower Adapter Modifications: None

Flow Test Data: 30.5 gpm in row 4

Date Assembled: 11-6-67; Location ITF

Date Loaded in Reactor: 11-21-67; for Run 26C

Initial Grid Position: 4B3

Position	Sponsor	Ident. No.	Comments
1	ANL	BDO4	Metal Fuel
2		BGO1	
3		BAO3	
4		BDO3	
5		BDO5	
6		BAO2	
7		FE01	
8		BE01	
9		BA01	
10		BC02	
11		BA05	
12		BF12	
13		BE01	
14		BE03	
15		BA04	
16		BF07	
17		BE02	
18		BC03	
19		BF06	

Subassembly No. X028

Type Hardware: MK-A-19

Orifice: No. of Holes 1; Dia of Holes 0.407

Lower Adapter Modifications: None

Flow Test Data: 19.1 gpm in row 4

Date Assembled: 10- 5-67; Location ITF

Date Loaded in Reactor: 11-21-67; for Run 26C

Initial Grid Position: 4D3

Position	Sponsor	Ident. No.	Comments
1	ANL	265	MK-II Fuel
2	ANL	237	MK-II Fuel
3	ANL	213	MK-II Fuel
4	ANL	203	MK-II Fuel
5	ANL	266	MK-II Fuel
6	ANL	259	MK-II Fuel
7	ANL	255	MK-II Fuel
8	ANL	232	MK-II Fuel
9	ANL	212	MK-II Fuel
10	ANL	234	MK-II Fuel
11	ANL	251	MK-II Fuel
12	ANL	262	MK-II Fuel
13	ANL	230	MK-II Fuel
14	ANL	263	MK-II Fuel
15	ANL	258	MK-II Fuel
16	ANL	288	MK-II Fuel
17	ANL	267	MK-II Fuel
18	ANL	205	MK-II Fuel
19	ANL	218	MK-II Fuel
20	ANL	284	MK-II Fuel
21	ANL	200	MK-II Fuel
22	ANL	270	MK-II Fuel
23	ANL	209	MK-II Fuel
24	ANL	201	MK-II Fuel
25	ANL	275	MK-II Fuel
26	ANL	279	MK-II Fuel
27	ANL	202	MK-II Fuel
28	ANL	287	MK-II Fuel
29	ANL	225	MK-II Fuel
30	ANL	289	MK-II Fuel
31	ANL	227	MK-II Fuel
32	ANL	219	MK-II Fuel
33	ANL	276	MK-II Fuel
34	ANL	277	MK-II Fuel
35	ANL	207	MK-II Fuel
36	ANL	269	MK-II Fuel
37	ANL	283	MK-II Fuel

Subassembly No. X029

Type Hardware: MK-B-37

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

Lower Adapter Modifications: None

Flow Test Data: 50.5 gpm in row 4

Date Assembled: 12-8-67; Location ITF

Date Loaded in Reactor: 12-22-67; for Run 27A

Initial Grid Position: 4E3

Position	Sponsor	Ident. No.	Comments
1	PNL	BT-1	Thermocouple
2		Dummy	
3		Dummy	
4	PNL	BT-2	Thermocouple
5		Dummy	
6		Dummy	
7	PNL	BG-13	Graphite
8	PNL	A-38	Structural
9		Dummy	
10		Dummy	
11	PNL	BG-6	Graphite
12		Dummy	
13		Dummy	
14		Dummy	
15	PNL	BG-14	Graphite
16		Dummy	
17		Dummy	
18		Dummy	
19		Dummy	

Subassembly No. X030

Type Hardware: MK-A-19

Orifice: No. of Holes 1; Dia of Holes 0.296

Lower Adapter Modifications: None

Flow Test Data: 12.5 gpm in row 6

Date Assembled: 7-17-67; Location ITF

Date Loaded in Reactor: 10-10-67; for Run 26B

Initial Grid Position: 6E1

Position	Sponsor	Ident. No.	Comments
1	PNL	1-2	Oxide Fuel
2		1-13	
3		1-14	
4		1-16	
5		1-1	
6		1-5	
7		1-6	
8		1-8	
9		1-15	
10		1-17	
11		1-4	
12		1-3	
13		1-7	
14		1-10	
15		1-12	
16		1-18	
17		1-19	
18		1-9	
19		1-11	

Subassembly No. X031

Type Hardware: MK-A-19

Orifice: No. of Holes 1; Dia of Holes 0.500

Lower Adapter Modifications: None

Flow Test Data: 33.0 gpm in row 6

Date Assembled: 11-6-67; Location ITF

Date Loaded in Reactor: 11-22-67; for Run 26C

Initial Grid Position: 6C1

Position	Sponsor	Ident. No.	Comments
1	PNL	2-19	Oxide Fuel
2		2-7	
3		2-8	
4		2-9	
5		2-10	
6		2-15	
7		2-16	
8		2-11	
9		2-12	
10		2-17	
11		2-1	
12		2-2	
13		2-18	
14		2-4	
15		2-5	
16		2-13	
17		2-3	
18		2-6	
19		2-14	

Subassembly No. X032

Type Hardware: MK-A-19

Orifice: No. of Holes 1; Dia of Holes 0.500

Lower Adapter Modifications: Row-7 holes 0.375

Flow Test Data: 33.2 gpm in row 6

Date Assembled: 11-6-67; Location ITF

Date Loaded in Reactor: 11-22-67; for Run 26C

Initial Grid Position: 6F1

Position	Sponsor	Ident. No.	Comments
1	UNC	105	Carbide Fuel
2		111	
3		97	
4		113	
5		93	
6		106	
7		92	
8		101	
9		104	
10		94	
11		96	
12		114	
13		112	
14		98	
15		107	
16		108	
17		99	
18		109	
19		110	

Subassembly No. X033

Type Hardware: MK-A-19

Orifice: No. of Holes 1; Dia of Holes 0.750

Lower Adapter Modifications: Row-5 holes 0.314

Flow Test Data: 48.5 gpm in row 5

Date Assembled: 12- 7-67; Location ITF

Date Loaded in Reactor: 12-22-67; for Run 27A

Initial Grid Position: 5E2

Position	Sponsor	Ident. No.	Comments
1	ORNL	A	Structural
2	ORNL	B	Structural
3	ORNL	C	Structural
4	ORNL	D	Structural
5	ORNL	E	Structural
6	ORNL	F	Structural
7	ORNL	G	Structural

Subassembly No. X034

Type Hardware: MK-B-7

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

Lower Adapter Modifications: None

Flow Test Data: 11.9 gpm in row 2

Date Assembled: 4-3-68; Location ITF

Date Loaded in Reactor: 4-13-68; for Run 27F

Initial Grid Position: 2F1

Position	Sponsor	Ident. No.	Comments
1	ORNL	O-A-2	Structural
2	ORNL	B	Structural
3	ORNL	O-C-2	Structural
4	ORNL	D	Structural
5	ORNL	E	Structural
6	ORNL	F	Structural
7	ORNL	O-G-2	Structural

Subassembly No. X034A

Type Hardware: MK-B-7

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

Lower Adapter Modifications: None

Flow Test Data: ~12 gpm in row 2

Date Assembled: 9-22-69; Location FCF

Date Loaded in Reactor: 9-30-69; for Exp 38B

Initial Grid Position: 2F1

Position	Sponsor	Ident. No.	Comments
1	ORNL	L	Structural
2	ORNL	M	Structural
3	ORNL	H	Structural
4	ORNL	K	Structural
5	ORNL	N	Structural
6	ORNL	I	Structural
7	ORNL	J	Structural

Subassembly No. X035

Type Hardware: MK-B-7

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

Lower Adapter Modifications: None

Flow Test Data: 12.2 gpm in row 7

Date Assembled: 4-3-68; Location ITF

Date Loaded in Reactor: 4-13-68; for Run 27F

Initial Grid Position: 7B4

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

Subassembly No. X036

Type Hardware: MK-A-19

Orifice: No. of Holes 1; Dia of Holes 0.469

Lower Adapter Modifications: None

Flow Test Data: 19.8 gpm in row 7

Date Assembled: 4-11-68; Location ITF

Date Loaded in Reactor: 7-25-68; for Run 29D

Initial Grid Position: 7E1

Position	Sponsor	Ident. No.	Comments
1	INC	I-1	Structural
2	INC	I-2	Structural
3	INC	I-3	Structural
4	INC	I-4	Structural
5	INC	I-5	Structural
6	INC	I-6	Structural
7	INC	I-7	Structural

Subassembly No. X037

Type Hardware: MK-B-7

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

Lower Adapter Modifications: None

Flow Test Data: 11.8 gpm in row 7

Date Assembled: 4-15-68; Location ITF

Date Loaded in Reactor: 5-8-68; for Run 28A

Initial Grid Position: 7C3

Position	Sponsor	Ident. No.	Comments
1	INC	II-1	Structural
2	INC	II-2	Structural
3	INC	II-3	Structural
4	INC	II-4	Structural
5	INC	II-5	Structural
6	INC	II-6	Structural
7	INC	II-7	Structural

Subassembly No. XQ38

Type Hardware: MK-B-7

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

Lower Adapter Modifications: None

Flow Test Data: 11.8 gpm in row 7

Date Assembled: 4-15-68; Location ITF

Date Loaded in Reactor: 5-7-68; for Run 28A

Initial Grid Position: 7C5

Position	Sponsor	Ident. No.	Comments
1	PNL	X-7	Mixed Oxide
2	GE	F-4-J	Mixed Oxide
3	GE	L-2-1	Structural
4	GE	L-15-B	Structural
5	PNL	X-1	Mixed Oxide
6	GE	F-4-H	Mixed Oxide
7	GE	F-4-E	Mixed Oxide
8	GE	L-15-D	Structural
9	GE	F-4-K	Mixed Oxide
10	GE	F-4-L	Mixed Oxide
11	PNL	X-3	Mixed Oxide
12	PNL	X-6	Mixed Oxide
13	GE	F-4-A	Mixed Oxide
14	GE	L-15-C	Structural
15	GE	F-4-G	Mixed Oxide
16	PNL	X-4	Mixed Oxide
17	LASL	42B	Carbide Fuel
18	ANL	SOV-1	Mixed Oxide
19	GE	L-15-A	Structural

Subassembly No. X039

Type Hardware: MK-A-19

Orifice: No. of Holes 1; Dia of Holes 0.750

Lower Adapter Modifications: Row-5 holes 0.314

Flow Test Data: ~60 ³
~62 gpm in row 4

Date Assembled: 8-12-68; Location FCF

Date Loaded in Reactor: 8-15-68; for Run 30A

Initial Grid Position: 3C2

Position	Sponsor	Ident. No.	Comments
1	GE	B-1	Oxide Fuel
2	GE	B-6	Oxide Fuel
3	GE	B-7	Oxide Fuel
4		Dummy	
5	GE	B-5	Oxide Fuel
6	GE	B-4	Oxide Fuel
7	GE	B-8	Oxide Fuel
8	ANL	001	Oxide Fuel
9	ANL	002	Oxide Fuel
10	GE	B-16	Oxide Fuel
11	GE	B-2	Oxide Fuel
12	GE	B-9	Oxide Fuel
13	ANL	003	Oxide Fuel
14	ANL	004	Oxide Fuel
15	ANL	006	Oxide Fuel
16	GE	B-12	Oxide Fuel
17	GE	B-13	Oxide Fuel
18	GE	B-15	Oxide Fuel
19	GE	B-3	Oxide Fuel
20	ANL	007	Oxide Fuel
21	ANL	011	Oxide Fuel
22	ANL	012	Oxide Fuel
23	GE	B-11	Oxide Fuel
24	GE	B-10	Oxide Fuel
25	ANL	014	Oxide Fuel
26	ANL	016	Oxide Fuel
27	ANL	018	Oxide Fuel
28	ANL	021	Oxide Fuel
29	GE	B-14	Oxide Fuel
30	ANL	022	Oxide Fuel
31	ANL	023	Oxide Fuel
32	ANL	024	Oxide Fuel
33	ANL	025	Oxide Fuel
34		Dummy	
35	ANL	026	Oxide Fuel
36	ANL	029	Oxide Fuel
37	ANL	031	Oxide Fuel

Subassembly No. X040

Type Hardware: MK-B-37

Orifice: No. of Holes Open ; Dia of Holes _____

Lower Adapter Modifications: None

Flow Test Data: 68 gpm in row 5

Date Assembled: 8-8-68 ; Location ITF

Date Loaded in Reactor: 8-15-68 ; for Run 30A

Initial Grid Position: 5B2

Position	Sponsor	Ident. No.	Comments
1	GE	B-1	Oxide Fuel
2	GE	B-6	Oxide Fuel
3	GE	B-7	Oxide Fuel
4		Dummy	
5	GE	B-5	Oxide Fuel
6	GE	B-4	Oxide Fuel
7	GE	B-8	Oxide Fuel
8	ANL	001	Oxide Fuel
9	ANL	002	Oxide Fuel
10	GE	B-16	Oxide Fuel
11	GE	B-2	Oxide Fuel
12	GE	B-9	Oxide Fuel
13	ANL	003	Oxide Fuel
14	ANL	004	Oxide Fuel
15	ANL	006	Oxide Fuel
16	GE	B-12	Oxide Fuel
17	GE	B-13	Oxide Fuel
18	GE	B-15	Oxide Fuel
19	GE	B-3	Oxide Fuel
20	ANL	007	Oxide Fuel
21	ANL	011	Oxide Fuel
22		Dummy	
23	GE	B-11	Oxide Fuel
24	GE	B-10	Oxide Fuel
25	ANL	014	Oxide Fuel
26	ANL	016	Oxide Fuel
27	ANL	018	Oxide Fuel
28	ANL	021	Oxide Fuel
29	GE	B-14	Oxide Fuel
30	ANL	022	Oxide Fuel
31	ANL	023	Oxide Fuel
32	ANL	024	Oxide Fuel
33	ANL	025	Oxide Fuel
34		Dummy	
35	ANL	026	Oxide Fuel
36	ANL	029	Oxide Fuel
37	ANL	031	Oxide Fuel

Subassembly No. X040A

Type Hardware: MK-B-37

Orifice: No. of Holes Open ; Dia of Holes _____

Lower Adapter Modifications: None

Flow Test Data: ~68 gpm in row 5

Date Assembled: 8-14-69 ; Location FCF

Date Loaded in Reactor: 9-30-69 ; for Run 38B

Initial Grid Position: 5B2

Position	Sponsor	Ident. No.	Comments
1	PNL	7-19	Structural
2	PNL	7-21	Structural
3	PNL	7-17	Structural
4	PNL	7-22	Structural
5	PNL	7-20	Structural
6	PNL	7-16	Structural
7	PNL	7-18	Structural

Subassembly No. X041

Type Hardware: MK-B-7

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

Lower Adapter Modifications: None

Flow Test Data: 11.8 gpm in row 7

Date Assembled: 7-19-68; Location ITF

Date Loaded in Reactor: 7-24-68; for Run 29D

Initial Grid Position: 7A3

Position	Sponsor	Ident. No.	Comments
1	PNL	EC-1	Boron Carbide
2	PNL	BC-2	Boron Carbide
3	PNL	TA-1	Tantalum
4	PNL	TA-2	Tantalum
5	PNL	TA-3	Tantalum
6	PNL	BC-4	Boron Carbide
7	PNL	BC-5	Boron Carbide

Subassembly No. X042

Type Hardware: MK-B-7

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

Lower Adapter Modifications: None

Flow Test Data: 11.8 gpm in row 7

Date Assembled: 7-19-68; Location ITF

Date Loaded in Reactor: 7-24-68; for Run 29D

Initial Grid Position: 7D5

Position	Sponscr	Ident. No.	Comments
1	PNL	BC-3	Boron Carbide
2	PNL	BC-2	Boron Carbide
3	PNL	TA-4	Tantalum
4	PNL	TA-5	Tantalum
5	PNL	TA-3	Tantalum
6	PNL	BC-8	Boron Carbide
7	PNL	BC-5	Boron Carbide

Subassembly No. X042A

Type Hardware: MK-B-7

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

Lower Adapter Modifications: None

Flow Test Data: ~12 gpm in row 7

Date Assembled: 3-13-69; Location FCF

Date Loaded in Reactor: 4-2-69; for Run 33B

Initial Grid Position: 7D5

Position	Sponsor	Ident. No.	Comments
1	PNL	BC-3	Boron Carbide
2	PNL	BC-2	Boron Carbide
3	PNL	BTA-6	Tantalum
4	PNL	BTA-7	Tantalum
5	PNL	TA-3	Tantalum
6	PNL	BC-8	Boron Carbide
7	PNL	BC-5	Boron Carbide

Subassembly No. XO42B

Type Hardware: MK-B-7

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

Lower Adapter Modifications: None

Flow Test Data: ~12 gpm in row 7

Date Assembled: 2-25-70; Location FCF

Date Loaded in Reactor: 3-4-70; for Run 41A

Initial Grid Position: 7D5

Position	Sponsor	Ident. No.	Comments
1	GE	F9A- 4	Oxide Fuel
2	GE	F9A-10	Oxide Fuel
3	GE	F9A- 9	Oxide Fuel
4	GE	F9A-15	Oxide Fuel
5	GE	F9A-25	Oxide Fuel
6	GE	F9A-36	Oxide Fuel
7	GE	F9A-27	Oxide Fuel
8	GE	F9A-18	Oxide Fuel
9	GE	F9A-13	Oxide Fuel
10	GE	F9A- 5	Oxide Fuel
11	GE	F9A-35	Oxide Fuel
12	GE	F9A-37	Oxide Fuel
13	GE	F9A- 7	Oxide Fuel
14	GE	F9A-26	Oxide Fuel
15	GE	F9A- 6	Oxide Fuel
16	GE	F9A-20	Oxide Fuel
17	GE	F9A-30	Oxide Fuel
18	GE	F9A-34	Oxide Fuel
19	GE	F9A-29	Oxide Fuel
20	GE	F9A-11	Oxide Fuel
21	GE	F9A-16	Oxide Fuel
22	GE	F9A-21	Oxide Fuel
23	GE	F9A- 1	Oxide Fuel
24	GE	F9A-38	Oxide Fuel
25	GE	F9A-39	Oxide Fuel
26	GE	F9A- 3	Oxide Fuel
27	GE	F9A-28	Oxide Fuel
28	GE	F9A- 2	Oxide Fuel
29	GE	F9A-22	Oxide Fuel
30	GE	F9A-31	Oxide Fuel
31	GE	F9A-23	Oxide Fuel
32	GE	F9A-14	Oxide Fuel
33	GE	F9A-19	Oxide Fuel
34	GE	F9A- 8	Oxide Fuel
35	GE	F9A-24	Oxide Fuel
36	GE	F9C- 7	Oxide Fuel
37	GE	F9A-17	Oxide Fuel

Subassembly No. X043 (F9A)

Type Hardware: MK-F-37

Orifice: No. of Holes 7; Dia of Holes 0.349

Lower Adapter Modifications: None

Flow Test Data: 73 gpm in row 4

Date Assembled: 12-12-68; Location ITF

Date Loaded in Reactor: 2-20-69; for Run 33A

Initial Grid Position: 4D2

Position	Sponsor	Ident. No.	Comments
1		Dummy	
2		Dummy	
3		Dummy	
4	LASL	LADI-1	Ceramic Insul.
5		Dummy	
6		Dummy	
7		Dummy	

Subassembly No. XO44

Type Hardware: MK-B-7

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

Lower Adapter Modifications: None

Flow Test Data: 11.4 gpm in row 7

Date Assembled: 9-25-68; Location FCF

Date Loaded in Reactor: 9-28-68; for Run 31A

Initial Grid Position: 7A1

Position	Sponsor	Ident. No.	Comments
1		Dummy	
2		Dummy	
3		Dummy	
4		Dummy	
5		Dummy	
6		Dummy	
7		Dummy	
8		Dummy	
9		Dummy	
10	ANL/PNL	I2-10	Dosimetry
11		Dummy	
12		Dummy	
13		Dummy	
14		Dummy	
15		Dummy	
16		Dummy	
17		Dummy	
18	ANL/PNL	I2-18	Dosimetry
19		Dummy	

Subassembly No. X045

Type Hardware: MK-B-19

Orifice: No. of Holes 1 3; Dia of Holes 0.375
(In series) 0.216

Lower Adapter Modifications: None

Flow Test Data: 15.5 gpm in row 2

Date Assembled: 10-21-68; Location ITF

Date Loaded in Reactor: 11-4-68; for Run 31E

Initial Grid Position: 2B1

Position	Sponsor	Ident. No.	Comments
1		Dummy	
2		Dummy	
3		Dummy	
4		Dummy	
5		Dummy	
6		Dummy	
7		Dummy	
8		Dummy	
9		Dummy	
10	ANL/PNL	H2-10	Dosimetry
11		Dummy	
12		Dummy	
13		Dummy	
14		Dummy	
15		Dummy	
16		Dummy	
17		Dummy	
18	ANL/PNL	H2-18	Dosimetry
19		Dummy	

Subassembly No. X046

Type Hardware: MK-B-19

Orifice: No. of Holes ¹3; Dia of Holes ¹0.375
(In series) 0.216

Lower Adapter Modifications: None

Flow Test Data: 15.3 gpm in row 2

Date Assembled: 10-21-68; Location ITF

Date Loaded in Reactor: 11- 6-68; for Run 31F

Initial Grid Position: 2B1

Position	Sponsor	Ident. No.	Comments
1	ANL/PNL	H4-1	Dosimetry
2		Dummy	
3		Dummy	
4		Dummy	
5		Dummy	
6		Dummy	
7		Dummy	
8		Dummy	
9		Dummy	
10		Dummy	
11		Dummy	
12		Dummy	
13		Dummy	
14		Dummy	
15		Dummy	
16		Dummy	
17		Dummy	
18		Dummy	
19		Dummy	

Subassembly No. X047

Type Hardware: MK-B-19

Orifice: No. of Holes 1 3; Dia of Holes 0.375
(In series) 0.216

Lower Adapter Modifications: None

Flow Test Data: 15.0 gpm in row 4

Date Assembled: 10-21-68; Location ITF

Date Loaded in Reactor: 11-6-68; for Run 31F

Initial Grid Position: 4E2

Position	Sponsor	Ident. No.	Comments
1		Dummy	
2		Dummy	
3		Dummy	
4		Dummy	
5		Dummy	
6		Dummy	
7		Dummy	
8	ANL/PNL	H6-8	Dosimetry
9		Dummy	
10		Dummy	
11		Dummy	
12		Dummy	
13		Dummy	
14		Dummy	
15		Dummy	
16		Dummy	
17		Dummy	
18		Dummy	
19		Dummy	

Subassembly No. X048

Type Hardware: MK-B-19

Orifice: No. of Holes 1 3; Dia of Holes 0.375
(In series) 0.216

Lower Adapter Modifications: None

Flow Test Data: 16.2 gpm in row 6

Date Assembled: 10-21-68; Location ITF

Date Loaded in Reactor: 11-6-68; for Run 31F

Initial Grid Position: 6D2

Position	Sponsor	Ident. No.	Comments
1		Dummy	
2		Dummy	
3		Dummy	
4		Dummy	
5		Dummy	
6		Dummy	
7		Dummy	
8	ANL/PNL	H7-8	Dosimetry
9		Dummy	
10		Dummy	
11		Dummy	
12		Dummy	
13		Dummy	
14		Dummy	
15		Dummy	
16		Dummy	
17		Dummy	
18		Dummy	
19		Dummy	

Subassembly No. X049

Type Hardware: MK-B-19

Orifice: No. of Holes 1 3; Dia of Holes 0.375
(In series) 0.216

Lower Adapter Modifications: None

Flow Test Data: 16.4 gpm in row 7

Date Assembled: 10-21-68; Location 1TF

Date Loaded in Reactor: 11-6-68; for Run 31F

Initial Grid Position: 7A3

Position	Sponsor	Ident. No.	Comments
1	GE	L-2-E	Structural
2	GE	F-7-F	Oxide Fuel
3	GE	F-2-X	Oxide Fuel
4	GE	F-7-A	Oxide Fuel
5	GE	F-7-E	Oxide Fuel
6	GE	L-2-G	Structural
7	ORNL	S-1-A	Oxide Fuel
8	GE	F-2-G	Oxide Fuel
9	GE	F-7-8	Oxide Fuel
10	W	W-8-X	Carbide
11	ORNL	S-1-E	Oxide Fuel
12	ORNL	S-1-B	Oxide Fuel
13	GE	L-2-A	Structural
14	W	W-2-X	Carbide Fuel
15	GE	F-2-D	Oxide Fuel
16	ORNL	S-1-D	Oxide Fuel
17	GE	F-2-V	Oxide Fuel
18	GE	L-2-C	Structural
19	ORNL	S-1-C	Oxide Fuel

Subassembly No. X050

Type Hardware: MK-A-19

Orifice: No. of Holes 1; Dia of Holes 0.750

Lower Adapter Modifications: None

Flow Test Data: ~41 gpm in row 4

Date Assembled: 2-17-69; Location FCF

Date Loaded in Reactor: 2-23-69; for Run 33A

Initial Grid Position: 4C2

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

Subassembly No. X051 (PNL-3)

Type Hardware: MK-F-37

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

Lower Adapter Modifications: None

Flow Test Data: 60.5 gpm in row 3

Date Assembled: 11-22-68; Location ITF

Date Loaded in Reactor: 12-17-68; for Run 32B

Initial Grid Position: 3A2

Position	Sponsor	Ident. No.	Comments
1		Solid	
2		Solid	
3		Solid	
4		Solid	
5	ANL	BF-11	MK-IA Fuel
6		Solid	
7		Solid	
8		Solid	
9		Solid	
10	ANL	BF-04	MK-IA Fuel
11		Solid	
12		Solid	
13		Solid	
14		Solid	
15	ANL	BF-08	MK-IA Fuel
16		Solid	
17		Solid	
18		Solid	
19		Solid	

Subassembly No. X052

Type Hardware: MK-A-19

Orifice: No. of Holes 1; Dia of Holes 0.407

Lower Adapter Modifications: None

Flow Test Data: ~14.3 gpm in row 4

Date Assembled: 11-22-68; Location FCF

Date Loaded in Reactor: 11-25-68; for Run 32A

Initial Grid Position: 4C3

Position	Sponsor	Ident. No.	Comments
1	ANL	265	MK-II Fuel
2	ANL	237	MK-II Fuel
3	ANL	213	MK-II Fuel
4	ANL	203	MK-II Fuel
5	ANL	266	MK-II Fuel
6	ANL	259	MK-II Fuel
7	ANL	255	MK-II Fuel
8	ANL	232	MK-II Fuel
9	ANL	228	MK-II Fuel
10	ANL	234	MK-II Fuel
11	ANL	250	MK-II Fuel
12	ANL	262	MK-II Fuel
13	ANL	230	MK-II Fuel
14	ANL	263	MK-II Fuel
15	ANL	258	MK-II Fuel
16	ANL	288	MK-II Fuel
17	ANL	267	MK-II Fuel
18	ANL	205	MK-II Fuel
19	ANL	218	MK-II Fuel
20	ANL	284	MK-II Fuel
21	ANL	200	MK-II Fuel
22	ANL	270	MK-II Fuel
23	ANL	209	MK-II Fuel
24	ANL	206	MK-II Fuel
25	ANL	275	MK-II Fuel
26	ANL	279	MK-II Fuel
27	ANL	202	MK-II Fuel
28	ANL	287	MK-II Fuel
29	ANL	225	MK-II Fuel
30	ANL	289	MK-II Fuel
31	ANL	227	MK-II Fuel
32	ANL	219	MK-II Fuel
33	ANL	276	MK-II Fuel
34	ANL	277	MK-II Fuel
35	ANL	207	MK-II Fuel
36	ANL	269	MK-II Fuel
37	ANL	283	MK-II Fuel

Subassembly No. X053

Type Hardware: MK-B-37

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

Lower Adapter Modifications: None

Flow Test Data: ~ 50 gpm in row 4

Date Assembled: 11-25-68; Location FCF

Date Loaded in Reactor: 11-27-68; for Run 32A

Initial Grid Position: 4E3

Position	Sponsor	Ident. No.	Comments
1	PNL	5-26	Oxide Fuel
2	PNL	5-27	Oxide Fuel
3	PNL	5-32	Oxide Fuel
4	PNL	5-1	Oxide Fuel
5	PNL	5-28	Oxide Fuel
6	PNL	5-29	Oxide Fuel
7	PNL	5-33	Oxide Fuel
8	PNL	5-34	Oxide Fuel
9	PNL	5-2	Oxide Fuel
10	PNL	5-30	Oxide Fuel
11	PNL	5-31	Oxide Fuel
12	PNL	5-35	Oxide Fuel
13	PNL	5-36	Oxide Fuel
14	PNL	5-3	Oxide Fuel
15	PNL	5-4	Oxide Fuel
16	PNL	5-20	Oxide Fuel
17	PNL	5-21	Oxide Fuel
18	PNL	5-22	Oxide Fuel
19	PNL	5-5	Oxide Fuel
20	PNL	5-14	Oxide Fuel
21	PNL	5-15	Oxide Fuel
22	PNL	5-6	Oxide Fuel
23	PNL	5-23	Oxide Fuel
24	PNL	5-24	Oxide Fuel
25	PNL	5-37	Oxide Fuel
26	PNL	5-7	Oxide Fuel
27	PNL	5-16	Oxide Fuel
28	PNL	5-17	Oxide Fuel
29	PNL	5-25	Oxide Fuel
30	PNL	5-40	Oxide Fuel
31	PNL	5-9	Oxide Fuel
32	PNL	5-18	Oxide Fuel
33	PNL	5-19	Oxide Fuel
34	PNL	5-10	Oxide Fuel
35	PNL	5-11	Oxide Fuel
36	PNL	5-12	Oxide Fuel
37	PNL	5-13	Oxide Fuel

Subassembly No. X054 (PNL-5)

Type Hardware: MK-F-37

Orifice: No. of Holes Open ; Dia of Holes

Lower Adapter Modifications: None

Flow Test Data: 84 gpm in row 4

Date Assembled: 2-27-69 ; Location ITF

Date Loaded in Reactor: 3-31-69 ; for Run 33B

Initial Grid Position: 4E1

Position	Sponsor	Ident. No.	Comments
1	UNC	146	Carbide Fuel
2		142	
3		133	
4		139	
5		141	
6		136	
7		131	
8		137	
9		145	
10		143	
11		132	
12		130	
13		138	
14		140	
15		134	
16		129	
17		147	
18		144	
19		135	

Subassembly No. X055

Type Hardware: MK-A-19

Orifice: No. of Holes 1; Dia. of Holes 0.480

Lower Adapter Modifications: Row-7 holes 0.375

Flow Test Data: 30.0 7
30.3 gpm in row 6

Date Assembled: 2-18-69; Location ITF

Date Loaded in Reactor: 2-23-69; for Run 33A

Initial Grid Position: 6A4

Position	Sponsor	Ident. No.	Comments
1	GE	F9C-3	Oxide Fuel
2	GE	F9C-6	Oxide Fuel
3	GE	F9C-10	Oxide Fuel
4	GE	F9C-13	Oxide Fuel
5	GE	F9C-2	Oxide Fuel
6	GE	F9C-5	Oxide Fuel
7	GE	F9C-9	Oxide Fuel
8	GE	F9C-15	Oxide Fuel
9	GE	F9C-19	Oxide Fuel
10	GE	F9C-1	Oxide Fuel
11	GE	F9C-4	Oxide Fuel
12	GE	F9C-8	Oxide Fuel
13	GE	F9C-12	Oxide Fuel
14	GE	F9C-18	Oxide Fuel
15	GE	F9C-22	Oxide Fuel
16	GE	F9C-29	Oxide Fuel
17	GE	F9C-26	Oxide Fuel
18	GE	F9C-38	Oxide Fuel
19	GE	F9C-14	Oxide Fuel
20	GE	F9C-17	Oxide Fuel
21	GE	F9C-21	Oxide Fuel
22	GE	F9C-25	Oxide Fuel
23	GE	F9C-28	Oxide Fuel
24	GE	F9C-27	Oxide Fuel
25	GE	F9C-11	Oxide Fuel
26	GE	F9C-16	Oxide Fuel
27	GE	F9C-20	Oxide Fuel
28	GE	F9C-24	Oxide Fuel
29	GE	F9C-34	Oxide Fuel
30	GE	F9C-37	Oxide Fuel
31	GE	F9C-31	Oxide Fuel
32	GE	F9C-33	Oxide Fuel
33	GE	F9C-23	Oxide Fuel
34	GE	F9C-36	Oxide Fuel
35	GE	F9C-35	Oxide Fuel
36	GE	F9C-32	Oxide Fuel
37	GE	F9C-30	Oxide Fuel

Subassembly No. X056 (F9C)

Type Hardware: MK-F-37

Orifice: No. of Holes 7; Dia of Holes 0.349

Lower Adapter Modifications: None

Flow Test Data: 64 gpm in row 5

Date Assembled: 2-28-69; Location ITF

Date Loaded in Reactor: 4-3-69; for Run 33B

Initial Grid Position: 5C2

Position	Sponsor	Ident. No.	Comments
1	PNL	BNWL 29	Structural
2	PNL	BNWL 30	Structural
3	PNL	BNWL 34	Structural
4	PNL	BNWL 27	Structural
5	PNL	BNWL 31	Structural
6	PNL	BNWL 33	Structural
7	PNL	BNWL 32	Structural

Subassembly No. X057

Type Hardware: MK-B-7

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

Lower Adapter Modifications: None

Flow Test Data: 11.6 gpm in row 2

Date Assembled: 2-13-69; Location ITF

Date Loaded in Reactor: 2-23-69; for Run 33A

Initial Grid Position: 2B1

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

Subassembly No. X058 (F9D)

Type Hardware: MK-F-37

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

Lower Adapter Modifications: None

Flow Test Data: 48 gpm in row 7

Date Assembled: 4-21-69; Location ITF

Date Loaded in Reactor: 4-24-69; for Run 34A

Initial Grid Position: 7F3

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

Subassembly No. X059 (PNL-4)

Type Hardware: MK-F-37

Orifice: No. of Holes Open ; Dia of Holes _____

Lower Adapter Modifications: None

Flow Test Data: 88 gpm in row 4

Date Assembled: 4-17-69 ; Location ITF

Date Loaded in Reactor: 4-23-69 ; for Run 34A

Initial Grid Position: 4A1

Position	Sponsor	Ident. No.	Comments
1	INC	3-1	Structural
2	INC	3-2	Structural
3	INC	3-3	Structural
4	INC	3-4	Structural
5	INC	3-5	Structural
6	INC	3-6	Structural
7	INC	3-7	Structural

Subassembly No. X060

Type Hardware: MK-B-7

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

Lower Adapter Modifications: None

Flow Test Data: 11.5 gpm in row 7

Date Assembled: 3-26-69; Location ITF

Date Loaded in Reactor: 4-3-69; for Run 33B

Initial Grid Position: 7C3

Position	Sponsor	Ident. No.	Comments
1	INC	4-1	Structural
2	INC	4-2	Structural
3	INC	4-3	Structural
4	INC	4-4	Structural
5	INC	4-5	Structural
6	INC	4-6	Structural
7	INC	4-7	Structural

Subassembly No. X061

Type Hardware: MK-B-7

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

Lower Adapter Modifications: None

Flow Test Data: 11.5 gpm in row 7

Date Assembled: 4-11-69; Location ITF

Date Loaded in Reactor: 4-23-69; for Run 34A

Initial Grid Position: 7A5

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

Subassembly No. X062 (F9B)

Type Hardware: MK-F-37

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

Lower Adapter Modifications: None

Flow Test Data: 55 gpm in row 6

Date Assembled: 5-6-69; Location ITF

Date Loaded in Reactor: 5-23-69; for Run 35A

Initial Grid Position: 6F3

Position	Sponsor	Ident. No.	Comments
1	ANL	6	Magnet Mater.
2	ANL	1	Magnet Mater.
3	ANL	5	Magnet Mater.
4	ANL	7	Magnet Mater.
5	ANL	2	Magnet Mater.
6	ANL	4	Magnet Mater.
7	ANL	3	Magnet Mater.

Subassembly No. X063

Type Hardware: MK-B-7

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

Lower Adapter Modifications: None

Flow Test Data: None gpm in row

Date Assembled: 6-18-69; Location ITF

Date Loaded in Reactor: 6-29-69; for Run 36A

Initial Grid Position: 7F5

Position	Sponsor	Ident. No.	Comments
1	GE	F-5-E	Oxide Fuel
2		F-5-S	
3		F-5-J	
4		F-5-G	
5		F-5-D	
6		F-5-H	
7		F-5-C	
8		F-4-F	
9		F-5-Q	
10		F-5-R	
11		F-5-O	
12		F-5-I	
13		F-5-L	
14		F-5-P	
15		F-5-B	
16		F-5-A	
17		F-5-N	
18		F-5-K	
19		F-5-M	

Subassembly No. X064

Type Hardware: MK-A-19

Orifice: No. of Holes 1; Dia of Holes 0.480

Lower Adapter Modifications: Row-5 holes 0.314

Flow Test Data: 27 gpm in row 4

Date Assembled: 5-23-69; Location ITF

Date Loaded in Reactor: 5-28-69; for Run 35A

Initial Grid Position: 403

Position	Sponsor	Ident. No.	Comments
1	ANL	P-36	Structural
2		Dummy	
3	ANL	P-38	Structural
4		Dummy	
5		Dummy	
6	ANL	P-34	Structural
7		Dummy	
8	ANL	P-21	Structural
9	ANL	P-35	Structural
10	ANL	P-45	Structural
11	ANL	P-32	Structural
12	ANL	P-20	Temp. Monitor
13	ANL	P-30	Structural
14		Dummy	
15		Dummy	
16		Dummy	
17	ANL	P-22	Structural
18	ANL	P-44	Structural
19	ANL	P-19	Dosimeter
20	ANL	P-39	Structural
21	ANL	P-48	Structural
22		Dummy	
23	ANL	P-41	Structural
24	ANL	P-49	Structural
25		Dummy	
26	ANL	P-57	Structural
27		Dummy	
28		Dummy	
29		Dummy	
30	ANL	P-37	Structural
31		Dummy	
32	ANL	P-23	Structural
33	ANL	P-43	Structural
34	ANL	P-42	Structural
35		Dummy	
36	ANL	P-40	Structural
37	ANL	P-29	Structural

Subassembly No. X065

Type Hardware: MK-B-37

Orifice: No. of Holes 1 ; Dia of Holes 0.375
(In series) 3 ; Dia of Holes 0.216

Lower Adapter Modifications: None

Flow Test Data: 17.5 gpm in row 7

Date Assembled: 6-18-69 ; Location ITF

Date Loaded in Reactor: 8-8-69 ; for Run 36A

Initial Grid Position: 7E5

Position	Sponsor	Ident. No.	Comments
1	ANL	P-36	Structural
2		Dummy	
3	ANL	P-38	Structural
4		Dummy	
5		Dummy	
6	ANL	P-34	Structural
7		Dummy	
8	ANL	P-21	Structural
9	ANL	P-35	Structural
10	ANL	P-45	Structural
11	ANL	P-32	Structural
12		Dummy	
13	ANL	P-30	Structural
14		Dummy	
15		Dummy	
16		Dummy	
17	ANL	P-22	Structural
18	ANL	P-44	Structural
19	ANL	P-19	Dosimeter
20	ANL	P-39	Structural
21	ANL	P-48	Structural
22		Dummy	
23	ANL	P-41	Structural
24	ANL	P-49	Structural
25		Dummy	
26	ANL	P-57	Structural
27		Dummy	
28		Dummy	
29		Dummy	
30	ANL	P-37	Structural
31		Dummy	
32	ANL	P-23	Structural
33	ANL	P-43	Structural
34	ANL	P-42	Structural
35		Dummy	
36	ANL	P-40	Structural
37	ANL	P-29	Structural

Subassembly No. X065A

Type Hardware: MK-B-37

Orifice: No. of Holes 1 3 ; Dia of Holes 0.375
(In series) 0.216

Lower Adapter Modifications: None

Flow Test Data: ~17 gpm in row 7

Date Assembled: 9-18-69 ; Location FCF

Date Loaded in Reactor: 10-2-69 ; for Run 38B

Initial Grid Position: 7E5

Position	Sponsor	Ident. No.	Comments
1	ANL	P-36	Structural
2	ANL	EP-61	Structural
3	ANL	P-38	Structural
4		Dummy	
5		Dummy	
6	ANL	P-34	Structural
7	ANL	EP-62	Structural
8	ANL	P-21	Structural
9	ANL	P-35	Structural
10	ANL	P-45	Structural
11	ANL	P-32	Structural
12	ANL	EP-60	Structural
13	ANL	P-30	Structural
14		Dummy	
15		Dummy	
16		Dummy	
17	ANL	P-22	Structural
18	ANL	P-44	Structural
19	ANL	P-19	Dosimeter
20	ANL	P-39	Structural
21	ANL	P-48	Structural
22		Dummy	
23	ANL	P-41	Structural
24	ANL	P-49	Structural
25		Dummy	
26	ANL	P-57	Structural
27		Dummy	
28		Dummy	
29		Dummy	
30	ANL	P-37	Structural
31	ANL	EP-63	Structural
32	ANL	P-23	Structural
33	ANL	P-43	Structural
34	ANL	P-42	Structural
35	ANL	EP-64	Structural
36	ANL	P-40	Structural
37	ANL	P-29	Structural

Subassembly No. X065B

Type Hardware: MK-B-37

Orifice: No. of Holes 1 ; Dia of Holes 0.375
(In series) 3 ; Dia of Holes 0.216

Lower Adapter Modifications: None

Flow Test Data: ~17 gpm in row 7

Date Assembled: 1-21-70 ; Location FCF

Date Loaded in Reactor: 1-30-70 ; for Run 40A

Initial Grid Position: 7E5

Position	Sponsor	Ident. No.	Comments
1	ANL	P-36	Structural
2	ANL	EP-65	Structural
3	ANL	P-38	Structural
4		Dummy	
5		Dummy	
6	ANL	P-34	Structural
7		Dummy	
8	ANL	P-21	Structural
9	ANL	P-35	Structural
10	ANL	P-45	Structural
11	ANL	P-32	Structural
12	ANL	EP-67	Structural
13	ANL	P-30	Structural
14		Dummy	
15		Dummy	
16		Dummy	
17	ANL	P-22	Structural
18	ANL	P-44	Structural
19	ANL	P-19	Dosimeter
20	ANL	P-39	Structural
21	ANL	P-48	Structural
22		Dummy	
23	ANL	P-41	Structural
24	ANL	P-49	Structural
25		Dummy	
26	ANL	P-57	Structural
27		Dummy	
28		Dummy	
29		Dummy	
30	ANL	P-37	Structural
31	ANL	EP-68	Structural
32	ANL	P-23	Structural
33	ANL	P-43	Structural
34	ANL	P-42	Structural
35	ANL	EP-69	Structural
36	ANL	P-40	Structural
37	ANL	P-29	Structural

Subassembly No. X065C

Type Hardware: MK-B-37

Orifice: No. of Holes 1 ; Dia of Holes 0.375
(In series) 3 ; Dia of Holes 0.216

Lower Adapter Modifications: None

Flow Test Data: 17 gpm in row 7

Date Assembled: 3-25-70 ; Location FCF

Date Loaded in Reactor: 4-16-70 ; for Run 42

Initial Grid Position: 7E5

Position	Sponsor	Ident. No.	Comments
1		Solid	
2		Solid	
3		Solid	
4		Solid	
5		Dummy	
6		Solid	
7		Solid	
8		Solid	
9		Solid	
10	ANL	BF03	MK-IA Fuel
11		Solid	
12		Solid	
13		Solid	
14		Solid	
15	ANL	BF02	MK-IA Fuel
16		Solid	
17		Solid	
18		Solid	
19		Solid	

Subassembly No. X066

Type Hardware: MK-A-19

Orifice: No. of Holes 1; Dia of Holes 0.407

Lower Adapter Modifications: None

Flow Test Data: 14.5 gpm in row 4

Date Assembled: 4-18-69; Location FCF

Date Loaded in Reactor: 4-24-69; for Run 34A

Initial Grid Position: 4A3

Position	Sponsor	Ident. No.	Comments
1	ORNL	0 - 1	Al ₂ O ₃
2	PNL	BNWL-35	Structural
3	ORNL	ORNL-5	Structural
4	PNL	BNWL-38	Structural
5	PNL	BNWL-37	Structural
6	GE-NSP	Z - 1	Structural
7	PNL	BNWL-36	Structural

Subassembly No. X067

Type Hardware: MK-B-7

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

Lower Adapter Modifications: None

Flow Test Data: 11.5 gpm in row 7

Date Assembled: 5-19-69; Location ITF

Date Loaded in Reactor: 5-28-69; for Run 35A

Initial Grid Position: 4A3

Subassembly No. XO68
 Type Hardware: MK-B-61
 Orifice: No. of Holes 7; Dia of Holes 0.235
 Lower Adapter Modifications: None
 Flow Test Data: 49 gpm in row 4
 Date Assembled: 1-21-70; Location JTF
 Date Loaded in Reactor: 1-30-70; for Run 40A
 Initial Grid Position: 4A3

Pos.	Sponsor	Ident. No.	Pos.	Sponsor	Ident. No.
1	ANL	3	32	ANL	70
2		45	33		44
3		154	34		114
4		13	35		46
5		56	36		96
6		16	37		78
7		20	38		103
8		17	39		80
9		36	40		110
10		33	41		95
11		6	42		48
12		10	43		139
13		12	44		134
14		14	45		135
15		61	46		77
16		15	47		73
17		19	48		75
18		40	49		76
19		1	50		86
20		81	51		125
21		83	52		99
22		59	53		57
23		42	54		128
24		136	55		102
25		21	56		85
26		65	57		129
27		26	58		88
28		27	59		127
29		28	60		94
30		142	61		98
31		157			

NOTE: XO68 contains ANL MK-1A driver fuel capsules.

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

Subassembly No. X069 (PNL-7)

Type Hardware: MK-H-37

Orifice: No. of Holes 7; Dia. of Holes 0.276

Lower Adapter Modifications: None

Flow Test Data: 52.5 gpm in row 4

Date Assembled: 9-17-69; Location ITF

Date Loaded in Reactor: 10-1-69; for Run 38B

Initial Grid Position: 4F1

Position	Sponsor	Ident. No.	Comments
1	GE	F-4-H	Oxide Fuel
2	GE	F-4-A	Oxide Fuel
3	NUMEC	B-8	Oxide Fuel
4	GE	F-4-E	Oxide Fuel
5	GE	F-4-G	Oxide Fuel
6	NUMEC	B-2	Oxide Fuel
7	W	W-8-F	Carbide Fuel
8	GE	F-4-J	Oxide Fuel
9	GE	F-4-K	Oxide Fuel
10	NUMEC	B-6	Oxide Fuel
11	NUMEC	B-10	Oxide Fuel
12	BMI	1-3	Nitride Fuel
13	GE	F-4-L	Oxide Fuel
14	NUMEC	B-5	Oxide Fuel
15	NUMEC	B-7	Oxide Fuel
16	LASL	42-B	Carbide Fuel
17	NUMEC	B-4	Oxide Fuel
18	NUMEC	B-3	Oxide Fuel
19	LASL	K-36-B	Carbide Fuel

Subassembly No. XO70

Type Hardware: MA-A-19

Orifice: No. of Holes 1; Dia of Holes 0.750

Lower Adapter Modifications: Row-5 holes 0.375

Flow Test Data: ⁶³
55 gpm in row ³
5

Date Assembled: 1- 5-70; Location FCF

Date Loaded in Reactor: 1-10-70; for Run 39B

Initial Grid Position: 3E1

Position	Sponsor	Ident. No.	Comments
1	ANL	270	MK-II Fuel
2	ANL	287	MK-II Fuel
3	ANL	276	MK-II Fuel
4	ANL	283	MK-II Fuel
5	ANL	258	MK-II Fuel
6	ANL	200	MK-II Fuel
7	ANL	202	MK-II Fuel
8	ANL	219	MK-II Fuel
9	ANL	269	MK-II Fuel
10	ANL	E-17	MK-II Fuel
11	ANL	263	MK-II Fuel
12	ANL	284	MK-II Fuel
13	ANL	E-6	MK-II Fuel
14	ANL	E-7	MK-II Fuel
15	ANL	E-3	MK-II Fuel
16	ANL	203	MK-II Fuel
17	ANL	232	MK-II Fuel
18	ANL	230	MK-II Fuel
19	ANL	218	MK-II Fuel
20	ANL	275	MK-II Fuel
21	ANL	289	MK-II Fuel
22	ANL	277	MK-II Fuel
23	ANL	E-15	MK-II Fuel
24	ANL	E-1	MK-II Fuel
25	ANL	E-16	MK-II Fuel
26	ANL	205	MK-II Fuel
27	ANL	E-10	MK-II Fuel
28	ANL	225	MK-II Fuel
29	ANL	237	MK-II Fuel
30	ANL	259	MK-II Fuel
31	ANL	E-2	MK-II Fuel
32	ANL	267	MK-II Fuel
33	ANL	209	MK-II Fuel
34	ANL	265	MK-II Fuel
35	ANL	266	MK-II Fuel
36	ANL	234	MK-II Fuel
37	ANL	288	MK-II Fuel

Subassembly No. X071

Type Hardware: MK-B-37

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

Lower Adapter Modifications: None

Flow Test Data: ~50 gpm in row 4

Date Assembled: 1-23-70; Location FCF

Date Loaded in Reactor: 1-30-70; for Run 40

Initial Grid Position: 4C3

Position	Sponsor	Ident. No.	Comments
1	ANL	AO3 D1	Structural
2		ASOV 16	Oxide Fuel
3		ASOPC 7	Oxide Fuel
4		ASOV 14	Oxide Fuel
5		ASOPC 2	Oxide Fuel
6		ASOPC 3	Oxide Fuel
7		ASOPC 9	Oxide Fuel
8		ASOV 15	Oxide Fuel
9		ASOPC 1	Oxide Fuel
10		ASOVG 19	Oxide Fuel
11		ASOPC 8	Oxide Fuel
12		ASOPC 10	Oxide Fuel
13		ASOPC 4	Oxide Fuel
14		ASOVG 20	Oxide Fuel
15		ASOVG 17	Oxide Fuel
16		ASOPC 5	Oxide Fuel
17		ASOVG 21	Oxide Fuel
18		ASOVG 18	Oxide Fuel
19		ASOPC 6	Oxide Fuel

Subassembly No. X072

Type Hardware: MK-A-19

Orifice: No. of Holes 1; Dia of Holes 0.430

Lower Adapter Modifications: Row-7 holes 0.376

Flow Test Data: 24.5 gpm in row 6

Date Assembled: 12-10-69; Location ITF

Date Loaded in Reactor: 12-13-69; for Run 39A

Initial Grid Position: 6E2

Position	Sponsor	Ident. No.	Comments
1	PNL	6-1	Oxide Fuel
2	PNL	6-2	Oxide Fuel
3	PNL	6-3	Oxide Fuel
4	PNL	6-4	Oxide Fuel
5	PNL	6-5	Oxide Fuel
6	PNL	6-6	Oxide Fuel
7	PNL	6-7	Oxide Fuel
8	PNL	6-8	Oxide Fuel
9	PNL	6-9	Oxide Fuel
10	PNL	6-10	Oxide Fuel
11	PNL	6-11	Oxide Fuel
12	PNL	6-12	Oxide Fuel
13	PNL	6-13	Oxide Fuel
14	PNL	6-40	Oxide Fuel
15	PNL	6-15	Oxide Fuel
16	PNL	6-16	Oxide Fuel
17	PNL	6-17	Oxide Fuel
18	PNL	6-18	Oxide Fuel
19	PNL	6-19	Oxide Fuel
20	PNL	6-38	Oxide Fuel
21	PNL	6-21	Oxide Fuel
22	PNL	6-22	Oxide Fuel
23	PNL	6-23	Oxide Fuel
24	PNL	6-24	Oxide Fuel
25	PNL	6-25	Oxide Fuel
26	PNL	6-26	Oxide Fuel
27	PNL	6-41	Oxide Fuel
28	PNL	6-28	Oxide Fuel
29	PNL	6-29	Oxide Fuel
30	PNL	6-42	Oxide Fuel
31	PNL	6-39	Oxide Fuel
32	PNL	6-43	Oxide Fuel
33	PNL	6-33	Oxide Fuel
34	PNL	6-34	Oxide Fuel
35	PNL	6-44	Oxide Fuel
36	PNL	6-36	Oxide Fuel
37	PNL	6-45	Oxide Fuel

Subassembly No. XO73 (PNL-6)

Type Hardware: MK-H-37

Orifice: No. of Holes 7; Dia of Holes 0.193

Lower Adapter Modifications: None

Flow Test Data: 35.5 gpm in row 6

Date Assembled: 12-5-69; Location ITF

Date Loaded in Reactor: 12-13-69; for Run 39A

Initial Grid Position: 6C3

Position	Sponsor	Ident. No.	Comments
1	PNL	8-38	Oxide Fuel
2	PNL	8-2	Oxide Fuel
3	PNL	8-39	Oxide Fuel
4	PNL	8-4	Oxide Fuel
5	PNL	8-5	Oxide Fuel
6	PNL	8-6	Oxide Fuel
7	PNL	8-7	Oxide Fuel
8	PNL	8-8	Oxide Fuel
9	PNL	8-9	Oxide Fuel
10	PNL	8-10	Oxide Fuel
11	PNL	8-11	Oxide Fuel
12	PNL	8-12	Oxide Fuel
13	PNL	8-13	Oxide Fuel
14	PNL	8-14	Oxide Fuel
15	PNL	8-15	Oxide Fuel
16	PNL	8-16	Oxide Fuel
17	PNL	8-17	Oxide Fuel
18	PNL	8-18	Oxide Fuel
19	PNL	8-19	Oxide Fuel
20	PNL	8-20	Oxide Fuel
21	PNL	8-21	Oxide Fuel
22	PNL	8-22	Oxide Fuel
23	PNL	8-23	Oxide Fuel
24	PNL	8-24	Oxide Fuel
25	PNL	8-25	Oxide Fuel
26	PNL	8-26	Oxide Fuel
27	PNL	8-40	Oxide Fuel
28	PNL	8-28	Oxide Fuel
29	PNL	8-29	Oxide Fuel
30	PNL	8-30	Oxide Fuel
31	PNL	8-31	Oxide Fuel
32	PNL	8-32	Oxide Fuel
33	PNL	8-33	Oxide Fuel
34	PNL	8-34	Oxide Fuel
35	PNL	8-35	Oxide Fuel
36	PNL	8-36	Oxide Fuel
37	PNL	8-37	Oxide Fuel

Subassembly No. X074 (PNL-8)

Type Hardware: MK-H-37

Orifice: No. of Holes Open ; Dia of Holes _____

Lower Adapter Modifications: None

Flow Test Data: 58 gpm in row 5

Date Assembled: 12-8-69 ; Location ITF

Date Loaded in Reactor: 1-10-70 ; for Run 39B

Initial Grid Position: 5A2

Position	Sponsor	Ident. No.	Comments
1	UNC	105	Carbide Fuel
2		111	
3		97	
4		113	
5		93	
6		106	
7		92	
8		Dummy	
9	UNC	104	Carbide Fuel
10		94	
11		96	
12		114	
13		112	
14		98	
15		107	
16		108	
17		99	
18		109	
19		110	

Subassembly No. X075

Type Hardware: MK-A-19

Orifice: No. of Holes 1; Dia of Holes 0.750

Lower Adapter Modifications: Row-5 holes 0.314

Flow Test Data: ~48 gpm in row 5

Date Assembled: 1-29-70; Location FCF

Date Loaded in Reactor: 1-30-70; for Run 40A

Initial Grid Position: 5E4

Position	Sponsor	Ident. No.	Comments
1	W	W2-11	Oxide Fuel
2		W2-3	
3		W2-1	
4		W2-10	
5		W2-7	
6		W2-4	
7		W2-15	
8		W2-17	
9		W2-19	
10		W2-13	
11		W2-2	
12		W2-18	
13		W2-16	
14		W2-9	
15		W2-6	
16		W2-14	
17		W2-12	
18		W2-8	
19		W2-5	

Subassembly No. X076

Type Hardware: MK-A-19

Orifice: No. of Holes 1; Dia of Holes 0.308

Lower Adapter Modifications: Row-7 holes 0.375

Flow Test Data: 14 gpm in row 7

Date Assembled: 3-19-70; Location ITF

Date Loaded in Reactor: 3-27-70; for Run 41B

Initial Grid Position: 7D3

Note: All capsules have vent tube design; total length 42".

Position	Sponsor	Ident. No.	Comments
1		Dummy	
2		Dummy	
3	PNL	BNWL-39	Structural
4		Dummy	
5		Dummy	
6	ORNL	O-4	Structural
7	ORNL	O-3	Structural

Subassembly No. X077

Type Hardware: MK-B-7A

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

Lower Adapter Modifications: None

Flow Test Data: 3.5 gpm in row 8

Date Assembled: 3-13-70; Location ITF

Date Loaded in Reactor: 3-26-70; for Run 41B

Initial Grid Position: 8C4

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

NOTE: The de-encapsulated element from capsule BF-11 is in position 31; the other non-dummy positions are occupied by standard MK-1A driver fuel elements.

Subassembly No. X078

Type Hardware: MK-E-61

Orifice: No. of Holes 2 ; Dia of Holes 0.281
(In parallel) 0.290

Lower Adapter Modifications: None

Flow Test Data: --- gpm in row ---

Date Assembled: 4-2-70 ; Location FCF

Date Loaded in Reactor: 4-17-70 ; for Run 42A

Initial Grid Position: 4E3

Position	Sponsor	Ident. No.	Comments
1	UNC	201	Carbide Fuel
2	UNC	208	Carbide Fuel
3	UNC	192	Carbide Fuel
4	UNC	207	Carbide Fuel
5	UNC	200	Carbide Fuel
6	UNC	191	Carbide Fuel
7	UNC	188	Carbide Fuel
8	UNC	206	Carbide Fuel
9	UNC	196	Carbide Fuel
10	UNC	194	Carbide Fuel
11	UNC	198	Carbide Fuel
12	UNC	189	Carbide Fuel
13	UNC	209	Carbide Fuel
14	UNC	193	Carbide Fuel
15	UNC	197	Carbide Fuel
16	UNC	187	Carbide Fuel
17	UNC	195	Carbide Fuel
18	UNC	190	Carbide Fuel
19	UNC	199	Carbide Fuel

Subassembly No. X079

Type Hardware: MK-A-19

Orifice: No. of Holes 1; Dia of Holes 0.750

Lower Adapter Modifications: Row-5 holes 0.314

Flow Test Data: 52.5 gpm in row 4

Date Assembled: 3-26-70; Location ITF

Date Loaded in Reactor: 4-17-70; for Run 42

Initial Grid Position: 4B2

Position	Sponsor	Ident. No.	Comments
1	ANL	1	Oxide Fuel
2	ANL	2	Oxide Fuel
3	ANL	3	Oxide Fuel
4		Dummy	Conduit Tube
5	ANL	5	Oxide Fuel
6	ANL	6	Oxide Fuel
7	ANL	7	Oxide Fuel
8	ANL	8	Structural
9	ANL	9	Oxide Fuel
10	ANL	10	Oxide Fuel
11	ANL	11	Oxide Fuel
12	ANL	12	Oxide Fuel
13	ANL	13	Oxide Fuel
14	ANL	14	Oxide Fuel
15	ANL	15	Oxide Fuel
16	ANL	16	Oxide Fuel
17	ANL	17	Oxide Fuel
18	ANL	18	Oxide Fuel
19	ANL	19	Structural

Subassembly No. XX01

Type Hardware: Instrumented Subassembly

Orifice: No. of Holes 6; Dia of Holes 0.183

Lower Adapter Modifications: Contains orifice holes

Flow Test Data: ~29 gpm in row 5

Date Assembled: 10-28-69; Location ANL-III.

Date Loaded in Reactor: 11-19-69; for Run 39A

Initial Grid Position: 5F3

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

Subassembly No. XX02

Type Hardware: Instrumented Subassembly

Orifice: No. of Holes 6 ; Dia of Holes 0.304

Lower Adapter Modifications: Contains orifice Holes

Flow Data: 53 gpm in row 5F3 (installed)

Date Assembled: 3-70 ; Location ANL-I11.

Date Loaded in Reactor: 4-13-70 ; for Run 42

Initial Grid Position: 5F3

Position	Sponsor	Ident. No.	Comments
1	ANL	1	Stress Corrosion
2	ANL	2	Stress Corrosion
3	ANL	3	Stress Corrosion
4	ANL	11	Stress Corrosion
5	ANL	12	Stress Corrosion
6	ANL	13	Stress Corrosion
7	ANL	29	Stress Corrosion
8	ANL	30	Stress Corrosion
9	ANL	31	Stress Corrosion
10	ANL	8	Stress Corrosion
11	ANL	9	Stress Corrosion
12	ANL	10	Stress Corrosion
13	ANL	26	Stress Corrosion
14	ANL	27	Stress Corrosion
15	ANL	28	Stress Corrosion
16	ANL	44	Stress Corrosion
17	ANL	45	Stress Corrosion
18	ANL	46	Stress Corrosion
19		Dummy	
20		Dummy	
21		Dummy	
22		Dummy	
23		Dummy	
24		Dummy	
25		Dummy	
26		Dummy	
27		Dummy	
28		Dummy	
29		Dummy	
30		Dummy	
31		Dummy	
32		Dummy	
33		Dummy	
34		Dummy	
35		Dummy	
36		Dummy	
37		Dummy	

Subassembly No. X900

Type Hardware: MK-B-37

Orifice: No. of Holes 1 ; Dia of Holes 0.375
(In series) 3 ; 0.216

Lower Adapter Modifications: None

Flow Test Data: 16.7 gpm in row 7

Date Assembled: ~ 3-19-68 ; Location FCF

Date Loaded in Reactor: 3-20-68 ; for Run 27D

Initial Grid Position: 7A4