

January 25, 1990

Mr. William F. Simpson, Jr.
Office of Scientific and Technical Information
Post Office Box 62
Oak Ridge, Tennessee 37831

Dear Mr. Simpson:

SUBJECT: NUCLEAR REACTORS BUILT, BEING BUILT, OR PLANNED
(DOE/OSTI-8200), UPDATE REQUEST

With regard to your request of January 5, 1990 for updating DOE/OSTI-8200, we are enclosing corrected pages II-10, II-11, and II-13. Also enclosed is a "New Project List" page which contains data on the planned Arkansas Tech University research reactor. The Arkansas Tech University has filed for a license to construct and operate a TRIGA reactor and will use parts from the TRIGA reactor which has been dismantled at Michigan State University. If you need any additional information, please contact me at FTS 492-1102.

Sincerely,

Original signed by:

Theodore S. Michaels, Senior Project Manager
Non-Power Reactor, Decommissioning and
Environmental Project Directorate
Division of Reactor Projects - III,
IV, V and Special Projects
Office of Nuclear Reactor Regulation

Enclosure:
As stated

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PDR ORG ~~PLS DOE~~
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PDNP:PM *pm*
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1/25/90

CHW
PDNP:D
Sweiss
1/25/90



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

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Sincerely,

A handwritten signature in cursive script that reads "Theodore S. Michaels".

Theodore S. Michaels, Senior Project Manager
Non-Power Reactor, Decommissioning and
Environmental Project Directorate
Division of Reactor Projects - III,
IV, V and Special Projects
Office of Nuclear Reactor Regulation

Enclosure:
As stated

3. TEST, RESEARCH, AND UNIVERSITY REACTORS

PART I DOMESTIC REACTORS (DOMESTIC)

A. General Irradiation Test

Name and/or owner	Designation	Location	Principal nuclear contractor	Operator	Type	Authorized power & W(t)	Initial criticality (yr est)
OPERABLE							
Advanced Test Reactor (DOE)	ATR	INEL, ID Richland, WA	Essoco-B&W WHC	EG&G-ID WHC	Tank Sodium cooled	250,000	68 00
Fast Flux Test Facility (DOE)	FFTF					600,000	90 00
Subtotal					650,000		
Subtotal					650,000		

B. High-Power Research and Test

Name and/or owner	Designation	Location	Principal nuclear contractor	Type	Authorized power & W(t)	Initial criticality (yr est)
OPERABLE						
Brookhaven High Flux Beam Research Reactor (DOE)	HFBR	Upton, NY	BNL	Heavy water	60,000	65 00
Brookhaven Medical Research Reactor (DOE)	BMRR	Upton, NY	Doyntman	Tank	5,000	59 00
Cartersburg, Ind. Reactor (NRC)	CINR	Cartersburg, NY	AMF	Pool	5,000	61 00
High Flux Isotope Reactor (DOE)	HIFIR	Oak Ridge, TN	ORNL	Tank flux trap	85,000	65 00
National Institute of Standards and Technology (NRC)	NIST	Gaithersburg, MD	NES-D&R	Heavy water	20,000	67 00
Omega West Reactor (DOE)	OWR	Los Alamos, NM	LANL	Tank	8,000	56 00
Subtotal					183,000	
Subtotal					183,000	

C. Safety-Research and Test

Name and/or owner	Designation	Location	Principal nuclear contractor	Type	Authorized power & W(t)	Initial criticality (yr est)
OPERABLE						
Power-Burn Facility (DOE)	PBF	INEL, ID	EG&G-ID	Open tank	38,000	73 00
Transient Reactor Test (DOE)	TREAT	INEL Site, ID	ANL	Graphite	0.0	59 00
Subtotal					28,000.0	
Subtotal					28,000.0	

D. General Research

OPERABLE

Aeromet Operations, Inc. (NRC)	AGNIR	San Ramon, CA	GA	Pool-TRIGA core	250	69 00	
Annular Core Research Reactor (DOE)	ACRR	Kirtland AFB, East, NM	Sandia	UO ₂ , BeO	2,000	78 00	Transient
Biological Research Reactor (DOE)	JANUS	Argonne, IL	ANL	Tank	200	64 00	
Bulk Shielding Reactor (DOE)	BSR	Oak Ridge, TN	ORNL	Pool	2,000	50 00	BSR is light-water-cooled and moderated with a partially BeO-reflected core, which is suspended from a movable bridge and can be positioned to locations within a 12 by 25-foot matrix. The BSR may be operated simultaneously with the non-movable PCA Reactor (zero-power), which is located in the same pool.
Dow Chemical Co. (NRC)	TRIGA-Mk I	Midland, MI	GA	U-Zr hydride	250 300	67 00	
Fast Source Reactor (DOE)	AFSR	INEL Site, ID	ANL	Fast	1	59 00	
General Atomic, Advanced TRIGA-Mk F Prototype Reactor (NRC)	TRIGA-Mk F	La Jolla, CA	Owner	U-Zr hydride	1,500	60 00	
General Atomic, TRIGA-Mk F Prototype Reactor (NRC)	TRIGA-Mk I	La Jolla, CA	Owner	U-Zr hydride	250	58 00	
General Electric Nuclear Test Reactor (NRC)	NTR	Pleasanton, CA	GE	Light water	100	57 00	
Health Physics Research Reactor (DOE)	HPRR	Oak Ridge, TN	ORNL	Fast burst	10	62 00	The HPRR, installed in the Elementary Applications Research Facility, is a small, unmoderated fast reactor that can be operated in the steady-state or pulse mode.
Low Temperature Neutron Irradiation Facility (DOE)	LTNIF	Oak Ridge, TN	ORNL	Pool		88 00	A Low Temperature Neutron Irradiation Facility (LTNIF) has been constructed at the BSR for qualified experiments of no cost to users. The LTNIF, opened 12-85, provides a combination of high-neutron intensities and special environmental and testing conditions that have not been previously available in the U.S. Authorized power is negligible.
Neutron Radiography Facility (DOE)	NRAD	INEL, ID	ANL	Pool-TRIGA core	250	77 00	
Neutron Radiography Facility (DOE)	NRF	Richland, WA	WHC	U-Zr hydride	250	77 00	
Omaha Veterans Administration Hospital (NRC)	TRIGA-Mk I	Omaha, NE	GA	U-Zr hydride	18	59 00	
Rhode Island Nuclear Science Center (NRC)	RINSC	Narragansett, RI	RI	Pool	2,000	64 00	
Sandia Pulsed Reactor II (DOE)	SPR-II	Kirtland AFB, East, NM	Sandia	Prompt burst		67 00	Transient
Sandia Pulsed Reactor III (DOE)	SPR-III	Kirtland AFB, East, NM	Sandia	Prompt burst		75 00	Transient
Tower Shielding Reactor No. II (DOE)	TSR-2	Oak Ridge, TN	ORNL	Light water	1,000	60 00	TSR-II is a light-water cooled and moderated reactor, utilizing enriched uranium, aluminum-clad fuel plates in a spherical core to provide a spherically-

Cornell University Zero Power Reactor (NRC)	ZPR	Ithaca, NY	Vitro	Tank		62 00	Authorized power is negligible.
Florida, University of (NRC)	UFTR	Gainesville, FL	GNEC	Graphite/water	100	50 00	
Georgia Institute of Technology (NRC)	GTRR	Atlanta, GA	GNEC	Heavy water	5,000	64 00	
Idaho State University (NRC)	AGN-201P-103	Pocatello, ID	AGN	Homog. solid		67 00	The AGN-201P-103 was operated at San Ramon, CA, by Aerojet-General Corporation from 1957 to 1966. In 4-67 Idaho State University applied for a license to operate the reactor at Pocatello, ID. Authorized power is negligible.
Illinois, University of (NRC)	LOPRA	Urbana, IL	GA	U-Zr hydride	10	71 00	
Illinois, University of (NRC)	TRIGA-Mk II	Champaign-Urbana, IL	GA	U-Zr hydride	1,500	60 00	
Iowa State University (NRC)	UTR-10	Ames, IA	AS Inc.	Graphite/water	10	59 00	
Kansas State University (NRC)	TRIGA-Mk II	Manhattan, KS	GA	U-Zr hydride	250	62 00	
Lowell, University of (NRC)	ULR	Lowell, MA	GE	Pool	1,000	74 00	
Manhattan College (NRC)	MCZPR	New York, NY	AMF	Tank		64 00	Authorized power is negligible.
Maryland, University of (NRC)	TRIGA	College Park, MD	GA	Tank-TRIGA core	250	74 00	
Massachusetts Institute of Technology (NRC)	MITR-II	Cambridge, MA	ACF	Heavy-water reflected	5,000	52 00	
Michigan State University (NRC)	TRIGA-Mk I	East Lansing, MI	GA	U-Zr hydride	250	69 00	The core of the Michigan State Uni- versity reactor operated in the University of Illinois TRIGA facility from 1960 until transferred in 1968. <i>Has been decommissioned</i> <i>License is expected to be terminated</i>
Michigan, University of (Ford Nuclear Reactor) (NRC)	FNR	Ann Arbor, MI	B&W	Pool	2,000	57 00	
Missouri at Rolla, University of (NRC)	UMR-B	Rolla, MO	CW	Pool	200	61 00	
Missouri, University of (NRC)	MURR	Columbia, MO	Owner-IC	Tank	10,000	66 00	
New Mexico, University of (NRC)	AGN-201M-112	Albuquerque, NM	AGN	Homog. solid		66 00	AGN-201-112 was operated at the University of California, Berkeley, beginning in 1957. The University of New Mexico filed an application in 4-68 for transfer and recon- struction of the reactor at a site on its campus. The reactor achieved criticality at the Uni- versity of New Mexico on 10-7-66. Authorized power is negligible.
North Carolina State University (NRC)	PULSTAR	Raleigh, NC	AMF	Pool	1,000	72 00	
Ohio State University (NRC)	OSURR	Columbus, OH	Lockheed	Pool	10	61 00	
Oregon State University (NRC)	OSTR	Corvallis, OR	GA	U-Zr hydride	1,000	67 00	
Penn State TRIGA Reactor (NRC)	PSTR	University Park, PA	GA	Pool-TRIGA core	1,000	65 00	Owner: Pennsylvania State University. From 1955 to 1965 the Penn State reactor was operated as a 200-kW(t) pool-type reactor fueled with MTR-type elements.

61-11

New Project List

Reactor Name
or Project Description

Type (Based on DOE/OSTI-8200
(Classification))

(Check one.)

ARKANSAS TECH. UNIVERSITY

HAVE COME IN WITH A

CONSTRUCTION PERMIT.

AT PRESENT IT IS NOT

OPERABLE

- Power Reactors
 - Central Station Electric Power
 - Dual-Purpose
- Experimental Power-Reactor Systems
 - Electric-Power Systems
 - Auxiliary Power
 - Space Propulsion
- Test, Research, and University Reactors
 - General Irradiation Test
 - High-Power Research and Test
 - Safety-Research and Test
- General Research
- University Research and Teaching
- Materials Production
- Process Development
- Defense Power-Reactor Applications
 - Remote Installations
 - Propulsion (Naval)
- Developmental Power
 - Electric-Power Experiments and Prototypes
 - Propulsion Experiments and Prototypes
- Test
- Research
- Critical Assemblies
 - Civilian
 - Military

CHARACTERISTICS & OTHER DATA

TRIGA-MK I

RUSSELLVILLE,
ARKANSAS

GENERAL
ATOMIC

U-235 hydride

250 KW