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November 4, 1971

ACRS Members

TIMELINESS OF ACRS REVIEWS OF MULTIPLE-UNIT PLANTS

As a basis for discussion on the subject of how far in advance the ACRS should approve plant construction or operation, the Committee Staff has generated the table of dates which is attached. Following are the conclusions and recommendations based on a study of that table:

CONCLUSIONS

At CP Stage

1. If the applicant has applied for a multiple-unit CP in a single submittal, the ACRS has always approved these with a single report.
2. These applications have always been for units which had estimated startup dates two years or less apart.
3. Where the units were expected to be more than two years apart, separate reports ~~always~~ were written.
4. Separate reports have been issued in some cases where the units were not expected to be two years apart (for example; Dresden, Browns Ferry, Three Mile Island).

*Applications have been submitted and (see RFF 12/2/71)*

At OL Stage

1. For multiple-unit plants, the time between the date of ACRS report and predicted or actual fuel loading date has ranged from 4 months for Dresden 2 to 13 months at Point Beach 2 (will actually be about 19 months).
2. The ACRS decided not to write an OL report for Oconee 2 when the time to plant startup was predicted to be about 18 months (now this looks like the number will be 23 months).

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November 4, 1971

3. There has been no set correlation between the number of CP reports and the number of OL reports. For example:

	<u>No. CP Reports</u>	<u>No. OL Reports</u>
Dresden 2 and 3	2	2
Quad Cities 1 and 2	1	1
Oconee 1, 2, and 3	1	>1 (possibly 3)
Point Beach 1 and 2	2	1

#### RECOMMENDATIONS

1. That the ACRS follow its previous practice, not to approve for construction additional units which are more than two years behind the first one being constructed.
2. That, since the purpose of an OL review is, in part, to assess the adequacy of the constructed plant and the preparedness of the owner to operate it, full Committee review not be conducted more than 6-9 months prior to the predicted fuel loading date.

Original Signed by  
J. E. Hard

J. E. Hard  
Senior Staff Assistant

Attachment:  
Table of Multiple-Unit  
Reviews

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MULTIPLE-UNIT REVIEW

Units	CP Stage		Predicted or Actual Time Between Start-ups, Months	OL Stage		Time-ACRS Review to Criticality, Months
	Date of Applic.	Date of ACRS Report		Date of ACRS Report	Init. Criticality or Predicted Criticality	
Dresden 2 3	4/65 2/66	11/65 8/66	12	9/69 7/70	1/70 1/71	4 6
Indian Point 2 3	12/65 4/67	8/66 1/69	15	9/70	11/71 2/73	14
Quad Cities 1 2	5/66 8/66	12/66 12/66	0	3/71 3/71	11/71 11/71	8 8
Turkey Point 3 and 4	3/66	1/67	10 (6)*	6/71	12/71 (5/71)* 10/71 (11/71)	6 (0)* 16 (5)
Browns Ferry 1 and 2 3	7/66 7/67	3/67 3/68	9 7		5/72 - 2/73 9/73	
Poinc Beach 1 2	8/66 8/67	5/67 5/68	12 (9)	4/70 4/70	11/70 (8/70) 11/71 (5/71)	7 (4) 19 (13)
Oconee 1 2 3	12/66 12/66 4/67	7/67 7/67 7/67	8 (12) 12 (12)	9/70	12/71 (Spr. '71) 8/72 (Spr. '72) 8/73 (Spr. '73)	15 (6)
Peach Bottom 2 and 3	2/67	10/67	23		12/71 - 11/73	
Diablo Canyon 1 2	1/67 7/68	12/67 10/69	12	1/74 1/75		
Three Mile Island 1 2	5/67 4/68	1/68 7/69	14		12/72 2/74	
Prairie Island 1 2	4/67 8/67	3/68 3/68	20		4/72 12/73	
Surry 1 and 2	3/67	4/68	6		4/72 - 10/72	
Salem 1 2	12/66 10/67	6/68 6/68	12		6/73 6/74	
Zion 1 2	7/67 8/67	7/68 7/68	11		6/72 5/73	

\*Figures in ( ) are those given by applicants at time of ACRS Review.

Units	CP Stage		Predicted or Actual Time Between Start-ups, Months	OL Stage		Time-ACRS Review to Criticality, Months
	Date of Applic.	Date of ACRS Report		Date of ACRS Report	Init. Criticality or Predicted Criticality	
Cook 1 and 2	12/67	12/68	9		3/73 - 12/73	
Calvert Cliffs 1 and 2	1/68	3/69	19		11/71 - 7/73	
Hatch 1 2	5/68 7/70	5/69	24		4/73 4/75	
Brunswick 1 and 2	7/68	10/69	12		3/74 - 3/75	
Sequoia 1 and 2	10/68	2/70	12		10/73 - 10/74	
Hutchinson Island 1 2	1/69 5/71	3/70	24		1/74 1/76	
North Anna 1 and 2	3/69	8/70	12		8/74 - 8/75	
Limerick 1 and 2	2/70	8/71	24		10/74 - 10/76	
Newbold Island 1 and 2	2/70	8/71	24		12/74 - 12/76	
Farley 1 (Equip. Commit- 2 seats only a few months away)	10/69 6/70	10/71 10/71	24		10/74 10/76	
McGuire 1 and 2	9/70	10/71	16		6/75 - 12/76	
Arkansas 1 2	11/67 9/70	9/68	26		4/73 6/75	

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Page 1

D20

EXCERPT FROM

Oct. 20, 1969

SUMMARY OF 114th ACRS MEETING

2. ACRS Consideration of Advanced Reactor Concepts - Commissioner Johnson said industry was investing considerable funds in various advanced reactor concepts, and inquired if the ACRS was in a position to provide advisory opinions on the concepts' acceptability, particularly if the ACRS thought a particular concept would be totally unacceptable. The purpose of such opinions would be to alert industry that a particular design concept, or concepts, would not receive a favorable review from the ACRS, and to preclude industry expenditures on reactor concepts which were not acceptable. Replying to Dr. Hanauer, Commissioner Johnson said these ACRS opinions need not necessarily be in the public domain, although they should be prepared with the view that they could be made public. Commissioner Ramey asked if the ACRS' informal review of a proposed reactor site was ever confirmed in writing. Dr. Hendrie said recent site reviews have generally not been confirmed in writing, although in certain cases, such as with the Newbold Island site, a

letter of confirmation had been prepared. He predicted the ACRS would probably increasingly prepare letters of confirmation on site acceptability, rather than employ the route of verbal comments. Dr. Okrent inquired if the Commission was asking the ACRS to investigate other reactor concepts such as the fast gas cooled reactors in addition to those it is already studying. Commissioner Johnson said it is probably too early to request ACRS review of the fast gas reactor concept; Commissioner Ramey agreed and said the ACRS should review other advanced concepts only at the request of the Commission.

Chairman Seaborg inquired about the Committee's review of the Liquid Metal Fast Breeder Reactor. Dr. Hanauer said the ACRS had met many times on this subject. Mr. Shaw said the LMFBR was a project of considerable magnitude, involving AEC expenditures of approximately \$100 million per year. Although AEC staff is convinced the problems with this system can be solved, both the health and safety of the public, and Government and industry investment ~~could be~~ protected, it would be highly desirable to obtain from the ACRS its assurances as the detailed design of the project is developed. Commissioner Johnson ~~agreed, to assure~~ <sup>wants assurance</sup> that after vast sums of money were invested the ACRS would not at some later date inform the Commission the LMFBR was inherently unsafe. Mr. Shaw said it would be desirable, for example, if the ACRS would advise the Commission that it can, or cannot assume that a scram will not occur. Dr. Hanauer replied the ACRS had not as yet made such a determination relative to light water reactor systems; after they had resolved this matter, the Committee would be in a position to address itself to a scram in the LMFBR.

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ACRS ACTIVITIES ON  
ADVANCED REACTOR CONCEPTS

September 23, 1966	Subcommittee Visit to Peach Bottom #1 Reactor Site
October, 1966	Committee Review of Peach Bottom #1 Operating License
May 16, 1967	Subcommittee Meeting on Safety of HTGR's
June 12, 1967	Subcommittee Review of Fort St. Vrain, San Diego
July, 1967	Committee Review of Fort St. Vrain
August 8, 1967	Subcommittee Meeting on Fort St. Vrain
September 6, 1967	Subcommittee Review of Fort St. Vrain
September, 1967	Committee Review of Fort St. Vrain
November 1, 1967	Subcommittee Review of Fort St. Vrain
November, 1967	Committee Review of Fort St. Vrain
December 6, 1967	Subcommittee Review of Fort St. Vrain
January 25, 1968	SEFOR Site Visit
March 6, 1968	Subcommittee Review of Fort St. Vrain
March 18-23, 1968	Member Participation in University of California Program on Prestressed Concrete Nuclear Structures
March, 1968	Committee Review of Fort St. Vrain
April, 1968	Committee Reviews of Fort St. Vrain
July, 1968	Committee Discussion with Commissioners on Safety Review of New Reactor Concepts
August, 1968	Committee Review of OGA Large HTGR
September 3, 1968	Subcommittee Review of SEFOR
September 5, 1968	Subcommittee Meeting on Procedures for Review of New Reactor Concepts

FILE: Pre-Application Reviews

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October 6, 1969

September, 1968	Committee Review of SEFOR Operation
October 30, 1968	ACRS Orientation Meeting on LMFBF Safety
October, 1968	Committee Review of SEFOR 1 Mwt Operation
November 7-9, 1968	Member Participation in International Conference on Sodium Technology and Large Fast Reactor Design, ANL
December 12-13, 1968	Subcommittee Meeting on Fast Reactor Safety
January 17, 1969	Subcommittee Meeting on Large HTGR's - Chicago
February 17-19, 1969	Member Participation in Nuclear Safety Program, Annual Information Meeting, Oak Ridge
March 5, 1969	Subcommittee Review of SEFOR 20 Mwt Operation
March 12, 1969	Subcommittee Visit to Fort St. Vrain Site
March 13-14, 1969	Subcommittee Review of GGA Large HTGR, San Diego
March, 1969	Committee Review of SEFOR 20 Mwt Operation
April 9, 1969	Subcommittee Review of FBR Demonstration Plant
May 22-23, 1969	Member Participation in Meeting of Working Group on Liquid Metal Thermal Science, BNL
May, 1969	Committee Review of FBR Demonstration Plant
June 4, 1969	Subcommittee Review of FBR Demonstration Plant (Dow Chemical Fire)
July 18, 1969	FBR Demonstration Plant Site Visit
September 3, 1969	Subcommittee Review of GGA Large HTGR
September 15-16, 1969	Member Participation in LMFBF Safety Program Review, ANL

~~September 18-19, 1969~~

~~Subcommittee Review of FBR Demonstration Plant, Canoga Park and Santa Susana, California~~

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EXCERPT, SUMMARY, 113th ACRS MTG, 9/4-6/69 . . . Meeting with Commissioners  
Attendance was limited to the Commissioners (Seaborg, Ramey, Johnson, Thompson, and Larson), Mr. Price and ACRS Members (R. F. Fraley and W. B. McCool attended as observers.)

2. Preliminary Informal Site Reviews - Dr. Hanauer noted that potential applicants occasionally request oral guidance regarding the acceptability of a site without the establishment of a public record. He suggested that this is of concern since the public and the JCAE are not informed regarding the "commitments" made in these cases. It also can result in different interpretations of what is said by the parties involved. The Commissioners noted that:
  - a. the public does have an opportunity to participate when the CP hearing is held. Members of the public are not deprived of this opportunity by a preliminary, informal site review;
  - b. these reviews usually are in terms of limited information in a limited area (e.g., population distribution only with a positive finding limited to a conclusion that there are no obvious reasons to turn down the site. This is not considered a binding approval by the Commission.)

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Pre. Apton Review



017

ACRS ACTIVITIES ON  
ADVANCED REACTOR CONCEPTS

8/26/69

September 23, 1966	Subcommittee Visit to Peach Bottom #1 Reactor Site
October, 1966	Committee Review of Peach Bottom #1 Operating License
May 16, 1967	Subcommittee Meeting on Safety of HTGR's
June 12, 1967	Subcommittee Review of Fort St. Vrain, San Diego
July, 1967	Committee Review of Fort St. Vrain
August 8, 1967	Subcommittee Meeting on Fort St. Vrain

RD-15-1  
Pre-Plan Review

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ACRS ACTIVITIES ON  
ADVANCED REACTOR CONCEPTS

8/26/69

September 6, 1967	Subcommittee Review of Fort St. Vrain
September, 1967	Committee Review of Fort St. Vrain
November 1, 1967	Subcommittee Review of Fort St. Vrain
November, 1967	Committee Review of Fort St. Vrain
December 6, 1967	Subcommittee Review of Fort St. Vrain
January 25, 1968	SEFOR Site Visit
March 6, 1968	Subcommittee Review of Fort St. Vrain
March 18-23, 1968	Member Participation in University of California Program on Prestressed Concrete Nuclear Structures
March, 1968	Committee Review of Fort St. Vrain
April, 1968	Committee Reviews of Fort St. Vrain
July, 1968	Committee Discussion with Commissioners on Safety Review of New Reactor Concepts.
August, 1968	Committee Review of GGA Large HTGR
September 3, 1968	Subcommittee Review of SEFOR
September 5, 1968	Subcommittee Meeting on Procedures for Review of New Reactor Concepts
September, 1968	Committee Review of SEFOR Operation
October 30, 1968	ACRS Orientation Meeting on LMFBR Safety
October, 1968	Committee Review of SEFOR 1 MWt Operation
November 7-9, 1968	Member Participation in International Conference on Sodium Technology and Large Fast Reactor Design, ANL
December 12-13, 1968	Subcommittee Meeting on Fast Reactor Safety

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8/26/69

January 17, 1969	Subcommittee Meeting on Large HTGR's - Chicago
February 17-19, 1969	Member Participation in Nuclear Safety Program, Annual Information Meeting, Oak Ridge
March 5, 1969	Subcommittee Review of SEFOR 20 Mwt Operation
March 12, 1969	Subcommittee Visit to Fort St. Vrain Site
March 13-14, 1969	Subcommittee Review of OGA Large HTGR, San Diego
March, 1969	Committee Review of SEFOR 20 Mwt Operation
April 9, 1969	Subcommittee Review of FBR Demonstration Plant
May 22-23, 1969	Member Participation in Meeting of Working Group on Liquid Metal Thermal Science, BNL
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EXCERPT FROM

SUMMARY, 112th ACRS MEETING

EXECUTIVE SESSION

*Aug 7-9, 1969*

3. Siting Reports - The Committee discussed alternate means (e.g., oral, written, etc.) to convey to the Commission its conclusions and recommendations resulting from informal site reviews. Some questions raised were: If an oral conclusion is provided the Regulatory Staff and the prospective applicant, how can it be conveyed properly to AEC, the JCAE, and the public? How can a report be prepared which involves proprietary information and still advise the public of the ACRS decision? It was agreed that this matter should be discussed informally with the Commissioners as soon as possible.

*File  
Pre Application Review  
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