DMB-016

APR 22 1985

Docket No. 50-312

LICENSEE: SACRAMENTO MUNICIPAL UTILITY DISTRICT

FACILITY: RANCHO SECO NUCLEAR GENERATING STATION

SUBJECT: SUMMARY OF MEETING HELD ON JANUARY 8, 1985 TO DISCUSS THE PROPOSED LIVING SCHEDULE (INTEGRATED SCHEDULE) FOR RANCHO SECO

On January 8, 1985, members of the NRC staff and their consultants Franklin Research Center (FRC) met with representatives of SMUD. The purpose of the meeting was to provide the NRC staff and their contractor the opportunity to discuss their concerns with regard to SMUD's living schedule and to provide SMUD the opportunity to describe in detail the program. Enclosure 1 is the attendees list.

The licensee described the living schedule process from an initial preliminary prioritization of each modification to determine which modification package should be prepared first to preparation of final priority for each modification. The final prioritization of each modification is achieved by performing a quantitative assessment of each of the significant benefits and costs for the modification. The work sheet utilized for the benefit and cost evaluation is shown on enclosure 2. Enclosure 3 is the cost evaluation work sheet and enclosures 4 and 5 are brief descriptions of the benefit and cost categories that should be considered. Weighting factors for the benefit evaluation were previously established using the analytical hierarchy process, the experienced judgement of the licensee's senior personnel and review by the licensees management. The rating factors for each modification package are established by a single person based on experience and judgement. The final modification priority is established by entering the prioritization matrix (enclosure 6) with the developed modification costs and benefits.

The SMUD's living schedule consists of (1) the license amendment (2) the plan (3) the program and (4) the living schedule. The NRC staff and their contractors from their review of the submitted documents and discussions at the meeting provided the licensee with the following major comments.

1. In response to our concern that there be a sponsoring organization for the integrated schedule, SMUD identified Nuclear Engineering as the sponsoring organization and Paul Bosakowski as the individual responsible for maintaining the program.

2. In the August 31, 1984 submission (proposed Amendment No. 106 Rev. 1) the licensee proposed modifications and deletions to the license amendment and the plan from that proposed in the May 31, 1984 submission. We noted that the paragraph requiring SMUD maintain and provide documentation regarding the plan was deleted and suggested it be

re-instated. We also noted we had concerns with regard to mechanism for changing and updating the schedule specifically with regard to interaction of NRC and SMUD staff. We suggested that this section be strengthened. As a guide as to what the NRC found acceptable, we suggested they use the Pilgrim Nuclear Power Station license Amendment and Plan as a guide.

3. We noted that the schedules submitted (Rev. 0 and Rev. 1) seemed to differ and there appeared to be a number of discrepancies. The licensee explained most of the discrepancies. However, we indicated that a document control procedure should be implemented to prevent this in the future.

   The licensee indicated they would revise and re-submit the license amendment and plan in about 2 months.

Original signed by

Sydney Miner, Project Manager
Operating Reactors Branch #4
Division of Licensing

Enclosure: As Stated

cc w/enclosure:
See next page

ORB#4:DL
SMiner:cr
4/22/85

Enclosure 1

RANCHO SECO MEETING

JANUARY 8, 1985

ATTENDEES LIST

SYDNEY MINER	NRC/NRR/DL
JERRY CARTER	NRC/NRR/DL
J. H. ECKHARDT	NRC, SENIOR RESIDENT INSPECTOR
T. BIRKE	SMUD
LEE KEILMAN	SMUD
SIDNEY SMITH	SMUD CONSULTANT
JERRY DELEZENSKI	SMUD
JOHN McCOLLIGAN	SMUD
PAUL BOSAKOWSKI	SMUD
JEFF NALEWAY	SMUD
HUGH HONDORP	FRANKLIN RESEARCH CENTER
NAZIR AHMED	FRANKLIN RESEARCH CENTER
NEIL BURNET	BECHTEL

Enclosure 2

PRIORITIZATION
BENEFIT AND COST CALCULATION

MOD NO. _____ TITLE: _____

Benefit Evaluation	Rating	Weighting	Score
1. Accident and Release Prevention Mitigation (low-high) 0-10.....		.40	
2. Occupation Exposure Reduction (low-high) 0-10..		.10	
3. Operations and Maintenance Cost Reduction (low-high) 0-10.....		.10	
4. Personnel Error Avoidance Reduction (low-high) 0-10.....		.11	
5. Plant Availability Increase (low-high) 0-10....		.14	
6. Regulatory Limit Avoidance (low-high) 0-10.....		.15	
TOTAL.....		1.00	

Approved _____ Date _____
Review Group

Cost Evaluation Date: _____	$ Cost
1. Design and Implementation Cost -- $'s.....	
2. Human Error Potential and Inadvertent Actuation Costs, $'s/recovery x # of Events/Lifetime of Plant	
3. Occupation Exposure to Install 3,000 $'s/person-rem	
4. Occupation Exposure to Maintain Lifetime of Modification, 3,000 Present Value $'s/person-rem	
5. O&M Costs (include training and procedures) Lifetime of Modification, Present Value $'s of Increased Cost.....	
6. Outage Time Penalty for Implementation @ 350,000 $'s/day (Modification Not During Refueling or Exceeds Refueling Outage Duration)	
7. Plant Availability Penalty, Lifetime of Modification, Present Value $'s of Lost Output @ 350,000 $'s/day	
8. Other.....	
TOTAL.....	

PRELIMINARY

Cost Evaluation Workup Sheet

MOD NO. _____ TITLE: _____

1. Design and Implementation Cost -- $'s

2. Human Error Potential and Inadvertent Actuation Costs, $'s/recovery x # of Events/Lifetime of Plant

3. Occupation Exposure to Install 3,000 $'s/person-rem

4. Occupation Exposure to Maintain Lifetime of Modification, 3,000 Present Value $'s/person-rem

5. O&M Costs (include training and procedures) Lifetime of Modification, Present Value $'s of Increased Cost

6. Outage Time Penalty for Implementation @ 350,000 $'s/day (Modification Not During Refueling or Exceeds Refueling Outage Duration)

7. Plant Availability Penalty, Lifetime of Modification, Present Value $'s of Lost Output @ 350,000 $'s/day

8. Other

PRELIMINARY

Prepared By: _____ Date: _____

Each of the eight benefit categories are described briefly. When considering each benefit category, only the positive benefit should be considered. The negative aspects of any modification will be incorporated in the cost evaluation for the modification. The benefit evaluation is generally subjective, ratings from 0 to 10 correspond to low to high improvements in the characteristics.

Accident and Release Prevention and Mitigation Improvement

Modifications that add new, redundant, or improved capability or systems preventing or mitigating the consequences of radiological releases will be rated high. The goal is improvement of protection of "public health and safety". Modifications with little or ambivalent impact on "plant safety" will be rated low.

Occupational Exposure Reduction

Modifications that reduce radiation exposure resulting from routine or anticipateable plant operations, maintenance, refueling, or construction will be rated high. A low rating would be applied where there is no reduction in occupational exposure.

Operations and Maintenance Cost Reduction

Modifications that reduce annual operations and maintenance costs will be rated high. Fuel costs are not part of this consideration. A low rating would be applied where there is no reduction in O&M budget.

Personnel Error Avoidance Reduction

Modifications that reduce the liklihood or opportunity for operator or maintenance personnel error should be rated high. The errors may have safety, operational, or economic significance which should be rated in other appropriate categories. Modifications that have little or no impact on reducing personnel errors should be rated low.

Plant Availability Increase

Modifications that increase plant availability, capacity factor, or rated output should be rated high. This includes modifications that reduce events that historically have taken the plant off-line or modifications that would reduce the amount of time required for anticipateable maintenance outages. Modifications that have little or no improvement in plant availability should be rated low.

Regulatory Limit Avoidance Increase

Regulatory Limit Avoidance relates to those Technical Specifications and other NRC related requirements that can result in LER's or other licensee reporting. Mods that either eliminate the opportunities for violations or substantially reduce the frequency of probable reporting should be rated high.

PRELIMINARY

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2/3/84

Each of the cost categories are described briefly. When considering the cost, only the net positive costs should be considered. Negative costs are included in the Benefit Evaluation of the modification. The basis for cost numbers should be included as a worksheet attachment to the Benefit/Cost Evaluation Worksheet.

1. Design and Implementation Cost

This should include all direct and indirect engineering, procurement and contruction costs identifiable with the proposed modification. It should also include costs associated with start-up training and administrative implementation.

2. Implementation Outage Time Penalty

An outage time penalty should be applied when the proposed modification will require time during a plant outage for installation.

To calculate this, the outage related manhours should be divided by the outage daily manpower limit to obtain an equivalent number of outage days associated with the individual item. Using 600 mandays/day as the outage manpower limit, and assume an outage day to be worth $350,000, then the refueling outage time penalty is calculated as follows:

$$\text{Outage Time Penalty} = \$350{,}000 \times (\text{Outage Manhours for Activity}) \frac{1}{8 \times 600}$$

3. Plant Availability Penalty

This should be applied when the proposed modification will reduce the plant availability by some definable amount. This could be an explicit reduction in authorized plant output or an increase in scheduled maintenance outages or additional plant trips resulting from reduced operating margins. An estimate of the present value of those future losses in plant availability should be used.

4. Operations and Maintenance Costs

These costs are those increases in operations and maintenance costs, including training and administrative costs, resulting after implementation of the modification. The costs should be adjusted to reflect corresponding decreases in operation and maintenance costs resulting from elimination or replacement of existing systems or components.

Costs should be in current year dollars, present worthed over the lifetime of the plant. When O&M costs are difficult to estimate, the following general guidelines should be used:

For safety related items, use 100% of initial procurement and installation costs. For non-safety related items, use 50% of initial procurement and installation costs. Engineering costs are generally not directly related to O&M costs and therefore are not included.

5. Occupation Exposure to Install

An estimate should be made of the total person-rem exposure required to implement the modification. Exposure costs are based on the ALARA principle that radiation dose can be evaluated in real dollars. The dose level for each installation activity can be estimated by assuming a controlled area dose in rem/hour (.015 rem/hour is reasonable for non-specific controlled areas). This level is multiplied by the total controlled area manhours for installation and then by $3,000/person-rem. More specific estimates may be required for special tasks in high radiation areas.

6. Occupation Exposure to Maintain

An estimate should be made of the continuing operations and maintenance related occupational exposure. As described above, the estimated exposure should be converted to dollars and the future outlay of dollars should be converted to present value dollars. When the exposure is difficult to estimate, the dose for initial installation should be used.

7. Human Error Potential and Inadvertent Actuation

An estimate should be made of the costs that would be associated with human errors or inadvertent actuation. Although systems may be designed in accordance with such criteria as "single failure", redundancy or various levels of material and environmental qualification, errors or inadvertent actuations may result from increased system complexity and consequently in costs that increase the overall cost of the modification. The cost impact should be calculated based on the cost of the error or inadvertent actuation and an estimate of the frequency of the error or inadvertent actuation. The cost of the error or inadvertent actuation should include plant downtime ($350,000/day for 1-3 days) when a plant trip or forced outage is involved.

8. Other

Any other costs that can be associated with the modification, either as a part of its implementation or its operation and use after implementation, should be included here. For example, estimates for overall increased complexity of the plant and risk of interaction with other systems resulting in plant downtime. Requirements for special periodic engineering support or operations support would also be included here.

PRELIMINARY

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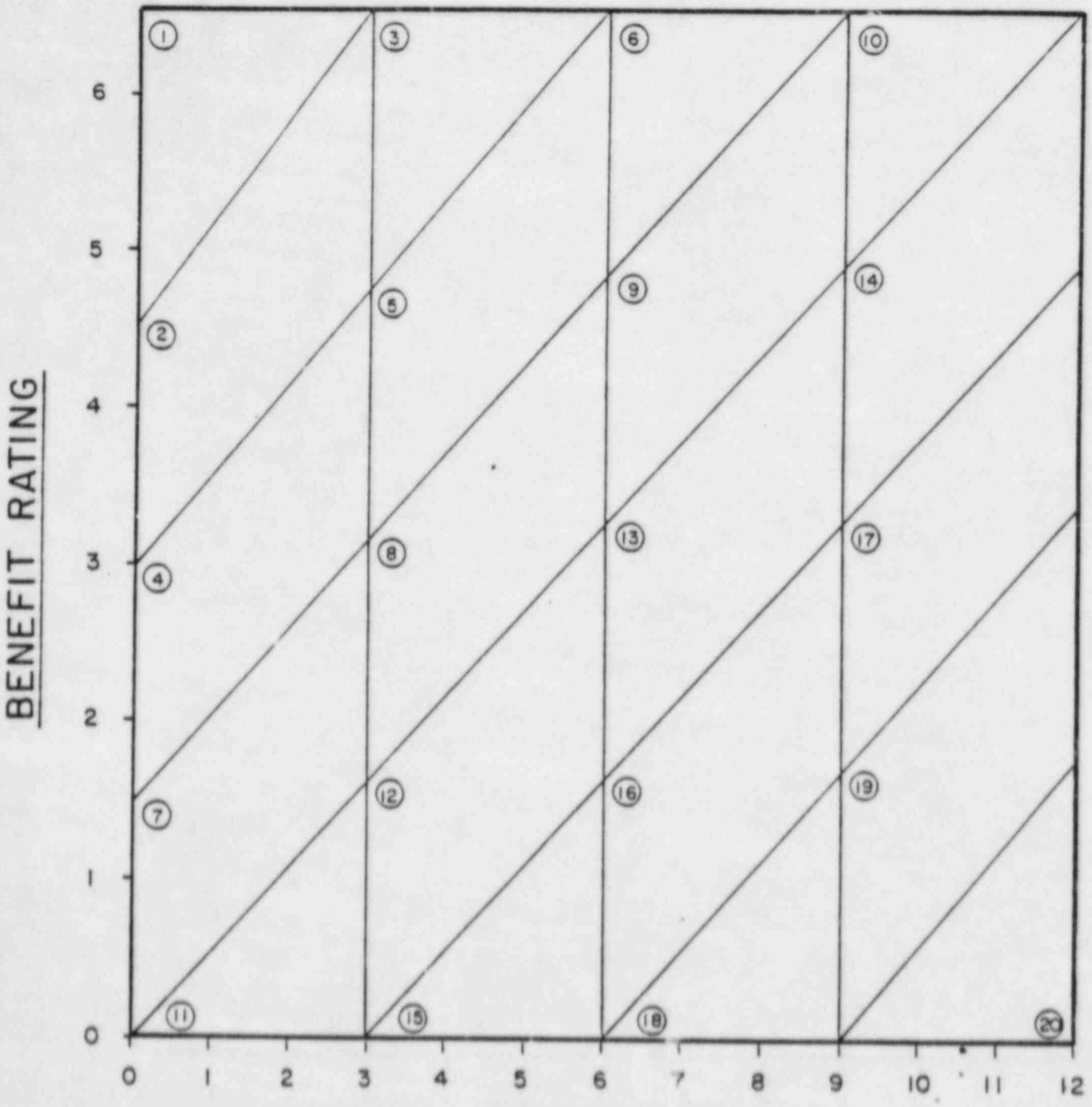
3/28/84

PRIORITIZATION MATRIX



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PRELIMINARY

(1) HIGHEST PRIORITY

(20) LOWEST PRIORITY

MEETING SUMMARY DISTRIBUTION

Licensee:Sacramento Municipal Utility District

*Copies also sent to those people on service (cc) list for subject plant(s).

Docket File
NRC PDR
L PDR
ORB#4 Rdg
Project Manager - S. Miner
JStolz
BGrimes (Emerg. Preparedness only)
OELD
EJordan, IE
ACRS-10
PMorriette
NRC Meeting Participants:
J. Carter
J. H. Eckhardt