ALASKA LEGISLATURE COMMITTEE FILES 1983 - 1984 8672
2670 SLC HB 4 (FILE 2)
2670

EXECUTIVE SUMMARY

Los Angeles's planned Metro Rail Project faces numerous uncertainties or risks during its period of construction. Many risks can be eliminated or reduced by proper management, some can be transferred to others by means of contracting procedures, and some remain. Of those remaining several are normally replaced with insurance coverage; cost of such insurance, however, may amount to as much as seven and four-tenths (7.4) (10) percent of direct construction costs. Such costs are not insignificant, such risks are not completely unmanageable. By taking over the construction insurance program, Southern California Rapid Transit District (SCRTD) can both reduce risk exposure of the entire Metro Rail project and achieve major cost savings; cost benefits of three and two-tenths (3.2) percent of construction costs can be anticipated from an owner-controlled insurance program (OCIP).

A quantitative, risk analysis of insurance options is used to resolve the best approach and potential cost differences. Included in the analysis process is the determination of major factors influencing costs, structuring interrelationships among these factors, generating and testing insurance alternatives, and performing sensitivity analyses on important assumptions and data. Formulating and investigating the insurance decision in this manner allows the author to reach conclusions and make strong recommendations on definition and implementation of SCRTD's insurance program.

The best insurance approach is a comprehensive, owner-controlled program containing workers' compensation, general liability, builders' risk and engineers' professional liability coverages. Savings over a conventional program are estimated to be forty-three (43) percent. A majority of savings derives from a loss-responsive workers' compensation policy; dedicated worker safety efforts in tunnel work are necessary to realize expected savings. SCRTD accepts a major risk by adopting a loss-responsive policy; anticipated reductions in worker-accident frequency make this risk worth bearing.

More detailed analysis of insurance components reveals appropriate deductible levels on general liability and builders' risk policies, as well as implementation strategy for engineers' professional liability coverage. SCRTD obtains much of the expected cost reductions by participating in loss-retention (i.e., deductible level) at a high level; values determined for cost savings assume that SCRTD has a two-million (2,000,000) dollar deductible level on both general liability and builders' risk. Changing general liability deductible to five-hundred thousand (500,000) dollars still affords most of the foreseen benefit. Contractors, on the other hand, only share a small portion of deductibles in the optimal program. Some level of deductible responsibility should be given to contractors as an incentive device; too high a deductible level will force contractors to purchase base-level policies, thus negating cost benefits. As long as dedutible exposure is not too great, the contractor will find it more cost-competitive to accept this risk and thus incentives. A two-thousand five hundred (2,500) dollar contractor deductible is chosen as reasonable and effective.

Recommended SCRTD Actions

SCRTD has already taken the first and perhaps most difficult step in implementating an OCIP, obtaining a legislative exception to permit this approach to be used on this transit project. The next step is to prepare a request for insurance administration proposals; particular care should be taken in defining expected scope of professional services. Evaluation criteria for administrator selection should concentrate on qualifications and OCIP experience of both key personnel and parent firm; other criteria include technical approach to insurance program and cost. Working closely with the chosen administrator during specific program design and insurance marketing is necessary, since it is the actual response of the insurance marketplace that fine-tunes deductible levels and coverage limits. To achieve estimated cost savings it is necessary to select an insurance administrator at least five (5) months before start of major construction activity; this duration should be sufficient for OCIP initiation and marketing to insurrance carriers. Earlier program start-up would allow additional use of the insurance administrator's risk management skills in project planning. Finally, SCRTD must monitor operation of the owner-controlled insurance program to obtain an on-going measure of its performance.

To achieve these savings, SCRTD must actively participate in liability exposure risk sharing; with this role also comes additional administrative burden. The final balance, however, is clearly in favor of an owner-controlled program; SCRTD should proceed confidently toward OCIP adoption.

SECTION I

INTRODUCTION

A thorough, quantitative risk analysis of insurance alternatives facing the Southern California Rapid Transit District (SCRTD) on its new Metro Rail Project demonstrates conclusively that a comprehensive, owner-controlled insurance program (OCIP) is more effective than any other examined approach. In reaching this finding the author examined both major program components and detailed specifications for each component. Further study was necessary to verify analysis procedures and data assessments. This report presents the total analysis performed, major results, data sensitivity testing and significant insights gained.

I.1 Summary of Report Content

Each of four report sections contributes uniquely to the total. The remainder of Section I, aside from this summary, concisely answers insurance issues addressed in the consulting agreement Scope of Services.* All seven responses are cross-referenced to further report subsections and Appendices to provide detailed explanations.

Section II furnishes the most significant results and insurance program design specifications. SCRTD's most cost-effective insurance option is an owner-controlled and purchased program consisting of workers' compensation, general liability, builders' risk and engineers' professional liability coverages. Contractors are given small deductible levels on general liability and builders' risk exposure as a safety incentive, while SCRTD takes a high deductible level. This District risk-taking combined with a loss-responsive workers' compensation insurance policy results in significant cost reductions.

Impacts of different deductible levels for both contractors and SCRTD receive special study in Section III. This section is devoted to detailed analyses of insurance component design, as well as sensitivity testing of critical data assessments. Both types of examination reveal the overall study to be robust; the report recommendations can thus be used with confidence.

Summary of important results and recommended SCRTD insurance actions highlight the final section. In Section IV, comparative results are emphasized over absolute values; preference for insurance alternatives and deductible levels are felt to be particularly reliable. Of the many steps necessary to effectively implement the proposed OCIP, the one most strongly stressed is evaluation and selection of an insurance program administrator. To this end, evaluation criteria are suggested, ranked in order of importance.

---

*Refer to Agreement between Dr. D. Ashley and Southern California Rapid Transit District for the development of this report, Audit No. 2349.

I.2 Response to Scope of Services

Following are summary replies to Scope of Services Task 2; included are locations where more detailed answers can be found:

Task 2.a "Which of the coverages (workers' compensation builders' risk, and/or general liability) should be included in the [owner-controlled] program?"

Response: Worker's compensation, builders' risk, general liability and engineers' professional liability coverages should all be included in SCRTD's owner-controlled insurance program.

Appropriate Report Sections. All of II and Appendix B.

Task 2.b "What are the most cost-effective levels of deductible for both [SCRTD] and the contractors?"

Response: SCRTD should accept at least a five-hundred thousand ($500,000) dollar deductible on general liablity coverage. SCRTD's most cost-effective deductible level on builders' risk coverage is two-million (2,000,000) dollars. The District should not accept a self-retention loss level (or deductible) on engineers' professinal liability exposure.

Contractor deductible levels above a minimum, on the other hand, do not have a major effect on total program costs. Contractors should be required to accept some deductible level; one-thousand (1,000) to two-thousand five-hundred (2,500) dollars per occurence should provide adequate contractor incentive to maintain a safe workplace.

Appropriate Report Sections. III.1 (SCRTD deductible) and III.2 (Contractor dedutible).

Task 2.c "What are the additional premium costs for increasing the upper levels of coverage?"

Response: The estimated cost of extending the general liability coverage limit from the seventy-five million (75,000,000) dollars used in this analysis to one-hundred million (100,000,000) dollars is three-hundred thousand (300,000) dollars. The builders' risk coverage level of one-hundred million (100,000,000) dollars is perceived to be a realistic

maximum; reducing this limit by twenty-five million (25,000,000) dollars would result in an approximate four-million (4,000,000) dollar premium savings. Reducing engineers' professional liability coverage from fifty-million (50,000,000) to twenty-five million (25,000,000) dollars may yield a four-million (4,000,000) dollar premium savings.

Appropriate Report Section. III.5

Task 2.d "For workers' compensation insurance within an [owner-controlled] program which is more efficient for the [District], using a [loss-responsive]* approach or a fixed-rate policy?"

Response: A loss-responsive workers' compensation policy is much more cost-effective.

Appropriate Report Sections . II.2

Task 2.e "Should engineers' errors and omissions [engineers' professional liability] insurance be included? If it is, should coverage extend down to the section designer level?"

Response: As stated in the response to 2.a above, engineers' professional liability coverage should be included; incorporation of section designers in this program leads to lower expected total premium costs.

Appropriate Report Sections. II.5 and Appendix C.

Task 2.f "Expected costs for the [owner-controlled] program shall be determined. These costs are to be presented in two ways: 1) total insurance program costs (including absorbed losses and contractor insurance costs passed on to the [District] in bids) and 2) costs to be included directly in the [District's] construction budget".

---

* Discussions with California insurance brokerage firms indicates that the group retrospective-rating workers' compensation insurance approach used in most other owner-controlled transit insurance programs is not applicable in California. Other approaches yielding approximately the same benefits include dividend policies purchased by the owner; "loss-responsive" is the term used here to indicate this range of options. A critical difference from the retrospective-rating approach is that "loss-responsive" policies may not guarantee dividends to the owner from a good safety experience.

Response to 1)- Total insurance cost including absorbed losses and costs passed on by contractors is approximately eighty-four million (84,000,000) dollars*; this is the appropriate value to be used in selecting the insurance option.

Response to 2)- The above figure can be disaggregated into three portions: 1) direct line-item costs to SCRTD, 2) SCRTD contingency reserve amounts and 3) indirect costs passed on through bids. First, direct budget items include "total premiums" and "insurance administrator fee"; these amount to approximately sixty-seven million (67,000,000) dollars*. Next, SCRTD should hold in reserve an estimated sixteen million (16,000,000) dollars for "SCRTD absorbed losses, insurance claims handling fee," and "risk premium" for accepting additional risk. The small difference between the sum of these values and the total used above is hidden in contractor bids.

Appropriate Report Sections. II.1 and Appendix B.

Task 2.g "Recommendations as to the Insurance Administrator's required qualifications. These recommendations may take the form of suggested evaluation criteria."

Response: Qualifications and experience of the director of the insurance administration function far outweighs any other single evaluation criterion; contracts between SCRTD's and its insurance administrator should clearly state SCRTD's rights of review and dismissal of key personnel. Service and marketing capabilities of the parent firm should be ranked second as a selection criterion. Following in order of importance are: company experience in owner-controlled insurance programs, technical approach, administrator management organization and cost.

Appropriate Report Sections. IV.2 and Appendix D.

---

* All insurance dollar costs are based on a total construction cost of $2 billion (in 1986 dollars) and a construction start of mid-1982; eighty-one (81) percent of construction was assumed to occur between 1985 and 1989. See Appendix E for insurance cost adjustments for different total construction costs.

SECTION II

ANALYSIS OF TOTAL INSURANCE PROGRAM

Analysis of insurance alternatives is separated into two parts; analysis of total program (this section) and Special Studies (Section III). Analysis of the total insurance program is presented first as the overall best program and then each coverage component is discussed individually. For purposes of clarity and brevity, this section gives only a synopsis of factors considered in insurance selection and the resulting analysis for SCRTD; Appendix A, "The Insurance Decision," and Appendix B, "Detailed Comparison of SCRTD Insurance Alternatives," provide a more complete back-up to this section.

II.1 Best Program

The Southern California Rapid Transit District can reduce its expected insurance costs by approximately forty-three (43) percent by electing to use a totally owner-controlled program. This program includes workers' compensation, general liability, builders' risk and engineers' professional liability* coverages. A detailed description of each component can be found in following subsections. Expected total cost of this comprehensive owner-controlled program is estimated to be four and two-tenths (4.2) percent of total construction costs. This value is comparable, though slightly lower, to experiences of other urban mass transit properties adopting a coordinated insurance program approach.

Cost-effectiveness of this proposed owner-controlled avenue derives primarily from savings in the workers' compensation and builders' risk elements; they account for fifty-one (51) and twenty-six (26) percent of total savings, respectively. Such savings in turn rely on a strong and effective safety program to reduce both accident frequency and severity; controlling safety has been the key to other successful owner-controlled programs. A substantial portion of anticipated savings come also from SCRTD's participation in directly absorbing losses. Due to the District's comparatively large asset position vis-a-vis other project participants it is relatively risk neutral over a wider range of potential losses; by taking on a substantial portion of these risks it can avoid risk premiums that others would add. A third major contributor to cost savings appears to be the current and anticipated future insurance market. It is forecast that the Metro Rail Project will achieve its construction peak during the years when insurance premium rates should also peak. Combination of higher self-retention levels with poor insurance market conditions leads to a significant cost reduction. A fourth and final factor influencing cost differences is the insurance volume purchasing power of an owner-controlled program. All four factors favor an OCIP.

*Engineers' professional liability insurance is often referred to as "errors and omissions" or "E&O" insurance.

A more detailed study of the program as a whole shows impacts of including or removing various coverage elements from the package. Figure 1 and the accompanying Table 1 show results of redefining program elements. This study shows rather convincingly that all four major coverage elements should be included. Table 2 complements this finding by demonstrating absolute and percentage differences of each element in the two insurance approaches. Workers' compensation,, general liability, builders' risk and engineers' professional liability coverage costs are reduced approximately fifty-four (54), fifty-nine (59), forty-five (45) and twenty-one (21) percent, respectively; these amass a total expected savings of approximately sixty-four (64) million dollars. An insurance administration fee of roughly one (1) million dollars* provides a slight offset and yields a total expected savings of sixty-three million (63,000,000) dollars.

Distribution of the total owner-controlled insurance program costs by both insurance type and work type provides some interesting insight. Using the base case data from Table 1, one can derive a "pie-chart" distribution of costs to insurance coverage component. The results displayed in Figure 2 indicate workers' compensation and engineers' professional liability combine to almost seventy (70) percent of expected total insurance dollar expenditure. By contrast, Figure 3 and supporting data in Table 3, indicate distribution of insurance dollars by work type; station, tunnel and system consume fifty-four (54) forty-two (42) and four (4) percent of total insurance costs. More detail on distribution by work type for each insurance type can be found in following subsections.

An interesting comparison between a conventional and owner-controlled insurance program can be made by analyzing costs incurred and passed on by each participant. Table 4 demonstrates such a study for workers' compensation, general liability and builders' risk coverages. Column 1 gives total insurance premium costs charged by the insurance carriers; in the conventional case these charges pass through the contractors who in turn add a profit fee as well as anticipated absorbed losses. In the OCIP approach the contractor only adds anticipated absorbed losses and a small amount to protect against claims not allowed by the insurance carriers; contractors intereviewed felt that approximately one (1) percent of claims normally honored by their own insurors would be disallowed by an OCIP. These contractor additions can be found by subtracting column 1 from column 2. SCRID costs including absorbed losses and a premium for accepting more risk are given by column 3, "SCRID costs." Combining "Total cost contractors pass to SCRID" with "SCRID costs" gives a value corresponding to totals used previously.

More detailed discussions of workers' compensation, general liability, builders' risk and engineers' professional liability coverages are contained in the following subsections. These discussions focus on specific coverage assumptions/definitions and distributions of cost among construction work types.

---

* This fee estimate is derived from discussions with several insurance industry experts. It includes the insurance administrator's profit and general overhead expenses; it does not include reimbursible expenses derived from claims handling administration. Reimbursible expenses are included directly in estimates of insurance cost components.

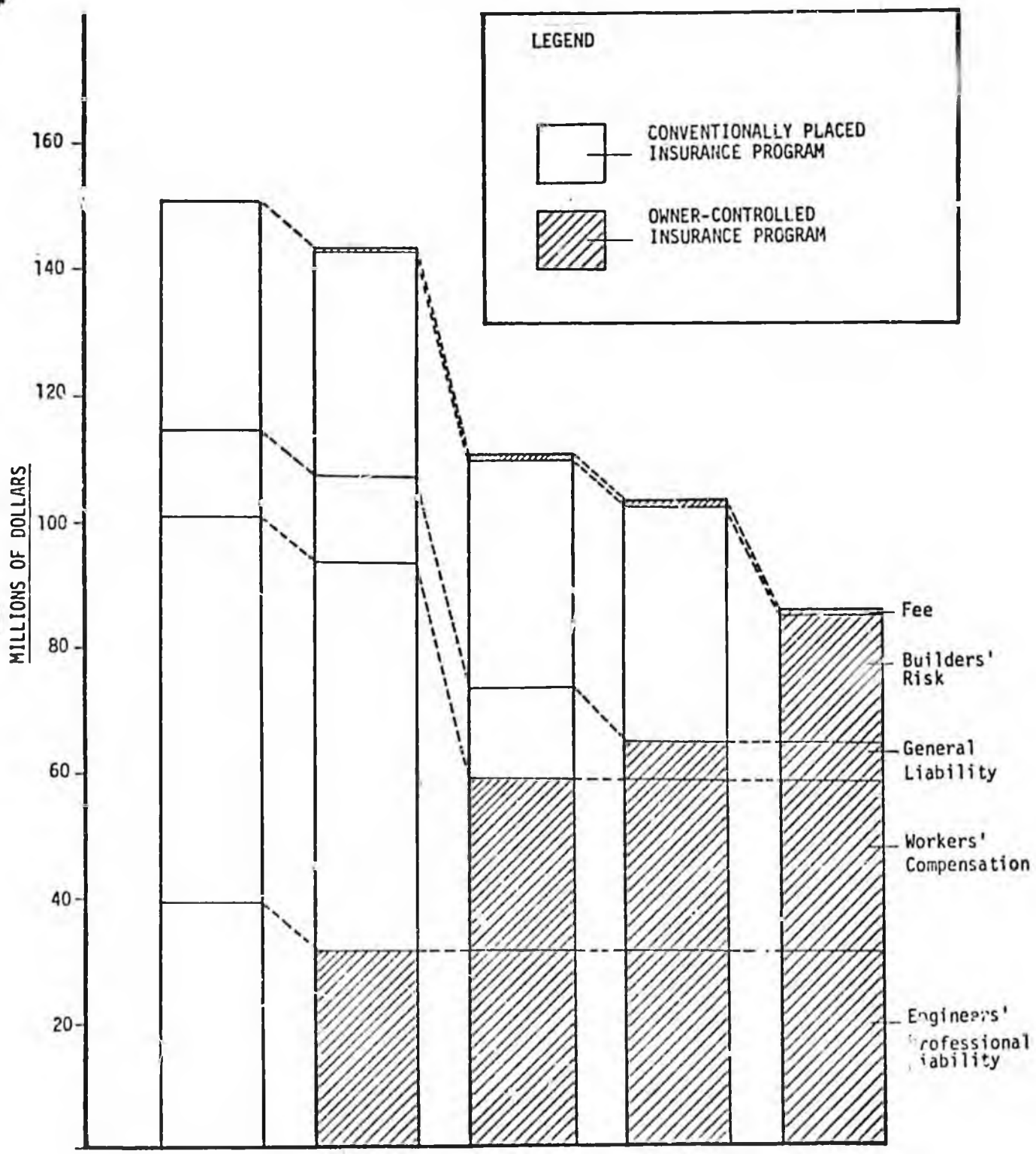


Figure 1 - Costs of Insurance Program Options

Base Case (Conventional)

Insurance Item	Cost	% of Total
Workers' Compensation	$ 59,972,000	41%
General Liability	13,309,000	9%
Builders' Risk	36,084,000	24%
Engineers' professional liability	38,000,000	26%
	$ 147,365,000*	100%

7.4% of construction cost

Base Case (Owner-controlled Insurance Program)

Insurance Item	Cost	% of Total
Workers' Compensation	$ 27,699,000	33%
General Liability	5,419,000	6.5%
Builders' Risk	19,714,000	23.5%
Engineers' Professional Liability	30,000,000	35.8%
Fee	$ 1,009,000	1.2%
	$ 83,841,000*	100%

4.2% of construction cost

TABLE 1 - Insurance Program Base Cases

*All insurance dollar costs are based on a total construction cost of $2 billion, in 1986 dollars. See Appendix E for insurance cost adjustments for different total construction costs.

Type	Conventional	OCIP	Difference	% from Conventional	% of Total Savings
Total	$147,365,000	$ 83,841,000	$ 63,524,000	43%	100%
Workers' Comp.	$ 59,972,000	27,699,000	32,273,000	54%	51%
General Liability	$ 13,309,000	[illegible]	7,890,000	59%	12%
Builders' Risk	$ 36,084,000	19,[illegible]	16,370,000	45%	26%
Engineers' Professional Liability	$ 38,000,000	30,000,000	8,000,000	21%	13%
Fee	0	$ 1,009,000	-1,009,000	NA.	-2%

TABLE 2 - Summary Comparison of Insurance Alternatives

II.2 Workers' Compensation

Workers' compensation insurance coverage is a legal requirement of the employer. When this coverage becomes an element in an owner-controlled insurance program, the project owner must guarantee that these legal requirements are fulfilled. Two options face the owner in adopting this element: 1) fixed-rate policy and 2) loss-responsive policy. Appendix A presents in limited detail differences between these two approaches. In the case of a fixed-rate policy, total insurance cost depends on the loss-ratio established as a basis; assumption of an industry-wide average yields workers' compensation costs on par with the conventional cost of approximately sixty million (60,000,000) dollars. Negotiating with the carrier a lower loss-ratio basis reduces total cost, but would not normally achieve the OCIP case of about twenty-eight million (28,000,000) dollars. Adopting an OCIP thus seems to also require using a loss-responsive option.

The majority of workers' compensation insurance cost is incurred in tunnel construction work. As can be seen in Figure 4 and Table 5, costs are distributed sixty-three (63) percent tunneling, thirty-two (32) percent station work and five (5) percent systems work. Safety programs instituted by SCRTD should thus emphasize worker safety in the tunnels; these programs should be especially concerned with potential methane gas hazards during tunneling.

II.3 General Liability

The base case general liability coverage assumes a contractor deductible level of two-thousand five-hundred (2,500) dollars per occurrence and a SCRTD retention amount of two-million ($2,000,000) dollars. Insurance coverage is assumed to a total limit of seventy-five million ($75,000,000) dollars; this can be compared to the limit of thirty-million (30,000,000) used in analyzing the conventional base case. Impacts of deductible/retention levels and upper-level coverage limits are further explored in Section III of this report.

As demonstrated by Figure 5 and Table 6, general liability costs arise primarily from station construction work; sixty-two (62) percent of total cost derives from this source. Tunnel and system construction contribute thirty-six (36) and two (2) percent, respectively. This distribution makes intuitive sense; SCRTD's greatest third-party liability exposure occurs in the open-excavation of work connected with stations. Adjacent buildings are especially sensitive to this type of construction.

II.4 Builders' Risk

Builders' risk insurance coverage as defined for the base case has deductible levels of two-thousand five-hundred (2,500) dollars and two-million (2,000,000) dollars for contractors and SCRTD, respectively. Total limit on coverage extends to one-hundred million (100,000,000) dollars compared to the conventional case of thirty-million (30,000,000) dollars. As with the general liability insurance, further study of deductibles and coverage limits is contained in Section III.

Work Types	Cost (Excl. Fee and E&O)	% of Total
Tunnel	$ 22,006,000	42%
System	$ 2,262,000	4%
Station	$ 28,564,000	54%
	$ 52,832,000	100%

TABLE 3 - Distribution of Program Costs Among Work Types

FIGURE 2. - OCIP Base Case: Distribution by Insurance Type

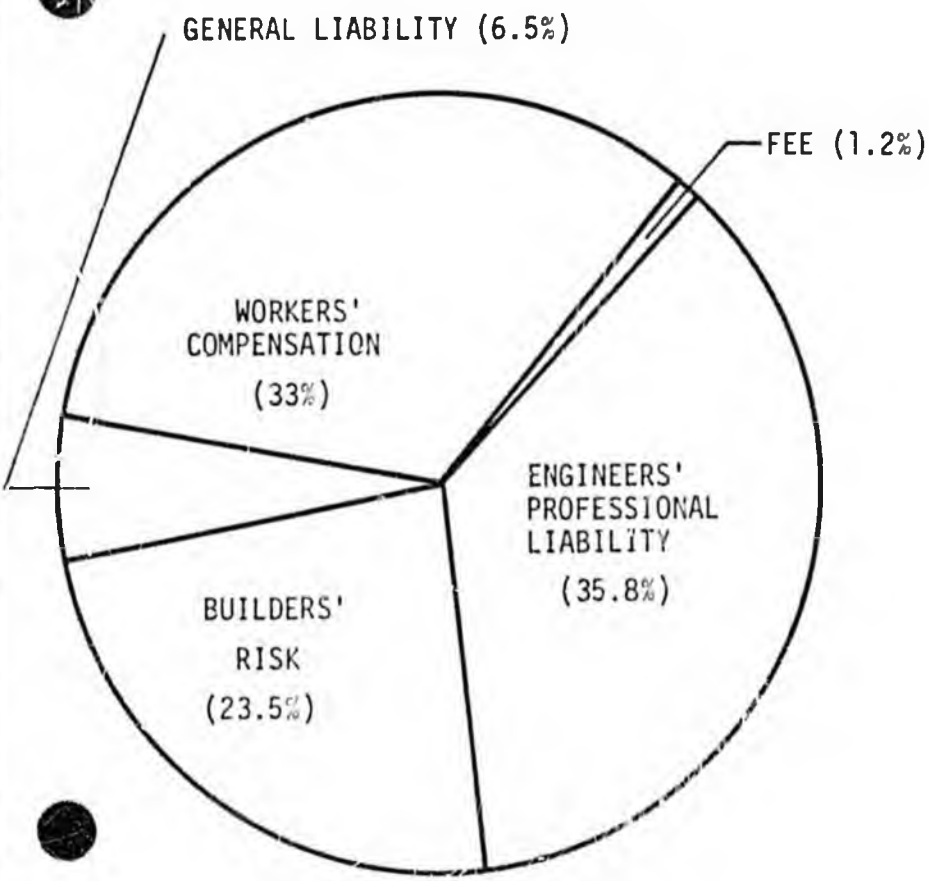
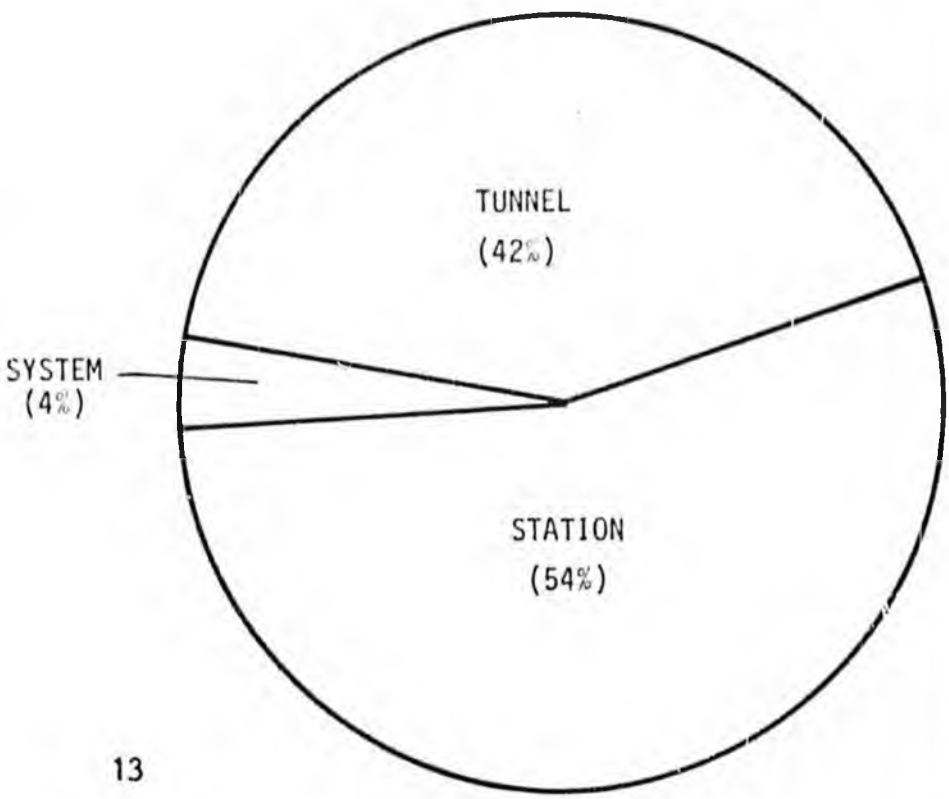


FIGURE 3 - OCIP Base Case: Distribution by Work Type



S/A-03-01

		Total Premium[1]	Total Cost Contractors Pass to SCRID[2]	SCRID Costs[3]	Total
Workers' Compensation	Conv.	$ 53,042,000	$ 59,972,000	$ 0	$ 59,972,000
	OCIP	22,051,000	22,051,000	5,648,000	27,699,000
General Liability	Conv.	10,942,000	13,309,000	0	13,309,000
	OCIP	548,000	1,392,000	4,027,000	5,419,000
Builders' Risk	Conv.	31,628,000	36,084,000	0	36,084,000
	OCIP	13,339,000	13,487,000	6,227,000	19,714,000
Total (Excl. E&O & Fee)[4]	Conv.	95,620,000	109,365,000	0	109,365,000
	OCIP	35,938,000	36,930,000	15,902,000	52,832,000

TABLE 4 - Insurance Costs by Participant

[1]Includes insurer's expected losses, risk premium and handling costs on covered loss amounts.

[2]Includes total premium from first column and expected contractor absorbed losses, uninsured losses, risk premium and associated profit.

[3]Includes expected SCRID absorbed losses, risk premium and handling costs on uninsured loss amounts.

[4]Engineers' professional liability insurance and insurance administrator's fee are omitted due to their different estimate bases; these bases are discussed in Sections II.1 and II.5.

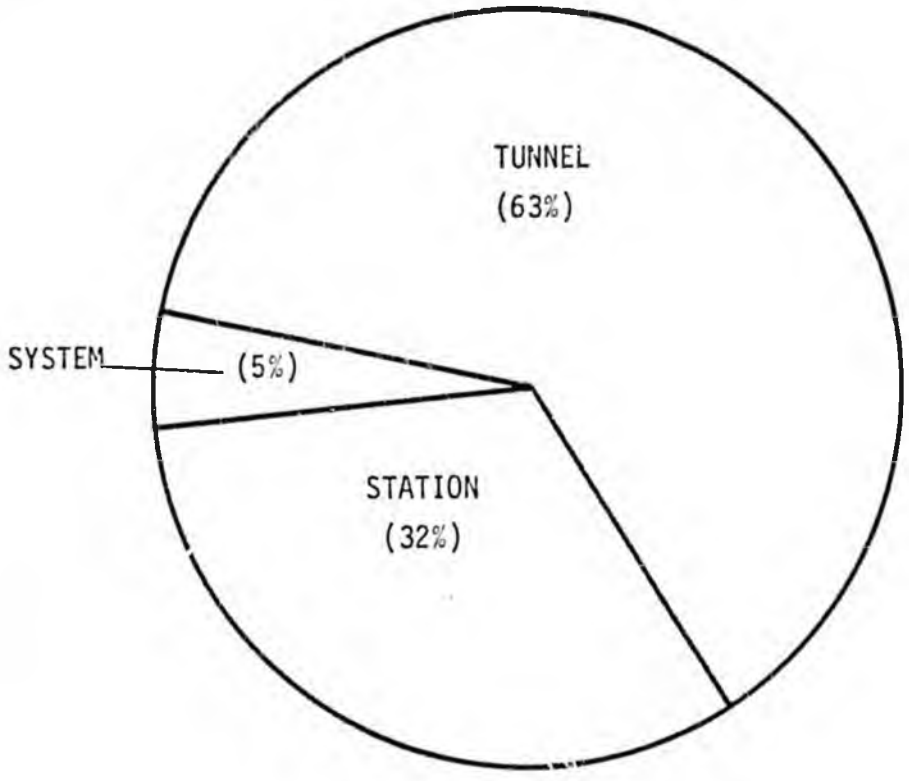


FIGURE 4 - Distribution of Workers' Compensation Insurance Dollar by Work Type

Work Type	Cost	% of Total
Tunnel	$ 17,469,000	63%
System	1,504,000	5%
Station	8,726,000	32%
	$ 27,699,000	100%

TABLE 5 - Distribution of Workers' Compensation Insurance Cost by Work Type

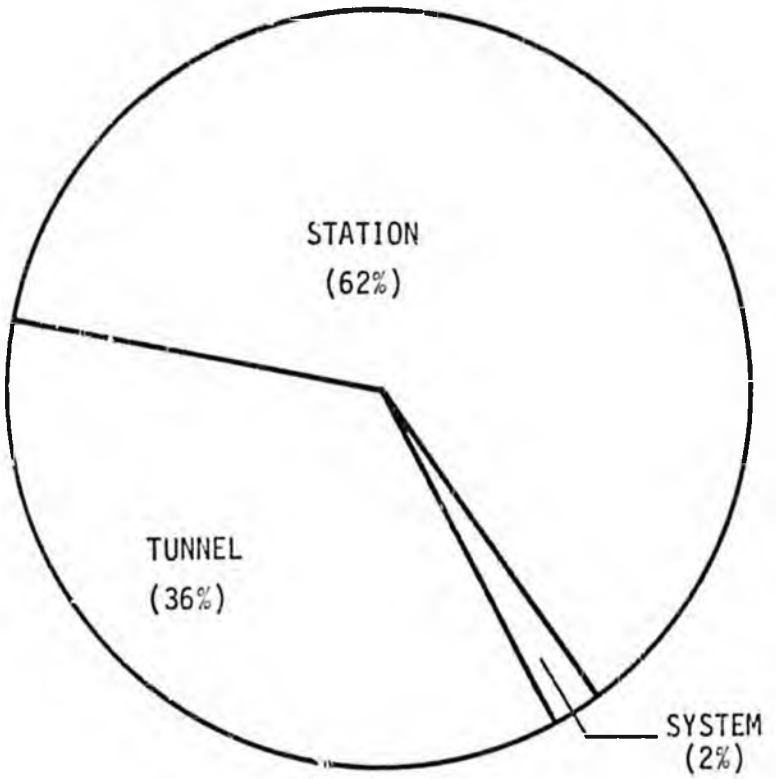


FIGURE 5 - Distribution of General Liability Insurance Dollar by Work Type

Work Type	Cost	% of Total
Tunnel	$ 1,950,000	36%
System	88,000	2%
Station	3,381,000	62%
	$ 5,419,000	100%

TABLE 6 - Distribution of General Liability Insurance Cost by Work Type

II.5 Engineers' Professional Liability

Analysis of engineers' professional liability, commonly called "errors and omissions" insurance, was performed in a different manner than the previous three insurance program components. Unlike these others, engineers' errors and omissions is quoted on an expected insurance premium rate basis. Two reasons contribute to this approach. First, actual claims against this policy will not typically be made until the transit system is in operation, or at least substantially finished with construction. The second reason is that experience of claims in this area are much more limited than other insurance areas. The second reason argues against accuracy of claims assessments while the first demonstrates premium quotations to be more appropriate anyway. A summary analysis of options and estimated costs to SCRTD is given in Appendix C.; these estimates should be considered as more "rough" or approximate than values presented for other program elements.

The chosen engineers' professional liability option, number three (3) in Appendix C, covers both primary engineering/architectural consultants and section designers from five-million (5,000,000) to fifty-million (50,000,000) dollars. Coverage for the first five-million (5,000,000) dollars must be obtained by the individual design firms; this "deductible" has the advantage of allowing engineering/architectural firms to maintain continuity in their corporate-wide professional liability insurance policy. As an additional advantage, this assures SCRTD that all designers still have incentives to follow "good engineering practices." These policies typically contain deductibles that require a firm to be financially sound to absorb. The five-million (5,000,000) dollar deductible is not explicitly determined as best, but it does reflect actual experiences on other transit projects. To obtain cost-reduction benefits, premium costs included in the firm's overhead rate should be limited to the first five-million (5,000,000) dollars of coverage.

Engineers' professional liability policies are often written on a "claims made" basis. Instead, SCRTD should insist on policies being written on an "occurrence" basis. The latter guarantees coverage available to cover losses resulting from engineering errors and omissions regardless of when the actual claim is made, while the former provides coverage only if the policy is in force when the claim is actually made. If the firm goes out of business after finishing work on the original project, or fails for any reason to renew its "claims made" policy, then there is no coverage available at the time a claim is actually made. An "occurrence" based Engineers' Professional Liability Policy is thus preferred for this Project.*

---

* This paragraph was contributed by F. Frederick Pollack, Insurance Manager, SCRTD.

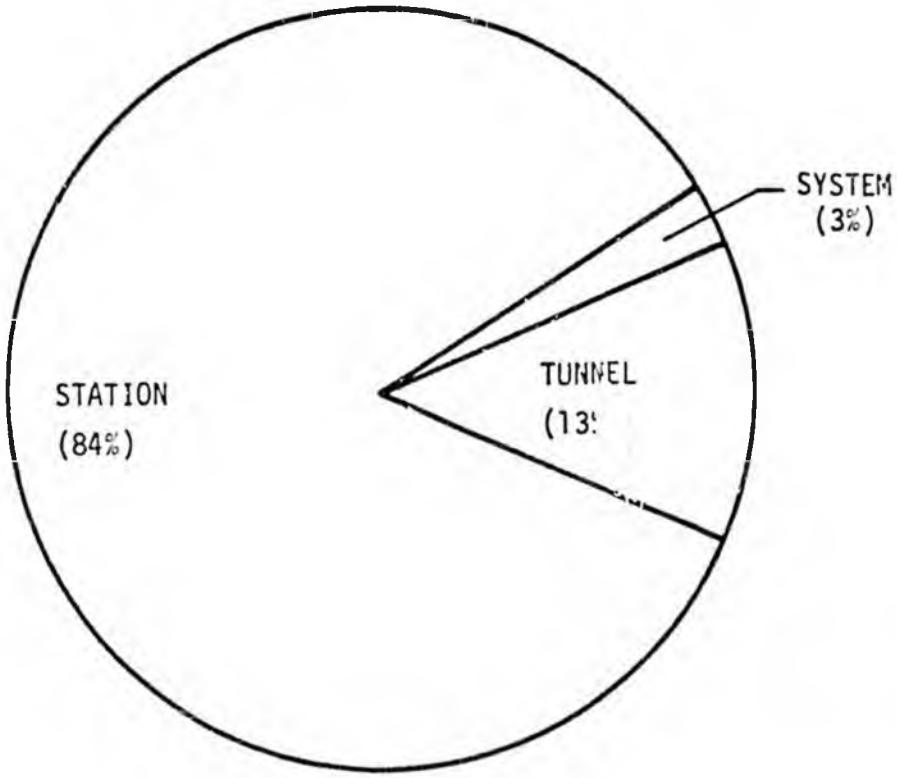


FIGURE 6 - Distribution of Builders' Risk Insurance Dollar by Work Type

Work Type	Cost	% of Total
Tunnel	$ 2,586,000	13%
System	670,000	3%
Station	16,458,000	84%
	$ 19,714,000	100%

TABLE 7 - Distribution of Builders' Risk Insurance Cost by Work Type

SECTION III

SPECIAL STUDIES

This section covers studies intended to explore various insurance strategies and sensitivity analyses to test robustness of assumptions used. Strategies considered are deductible policies for both SCRTD and contractors, inclusion of a safety incentive program to share good-safety cost savings with contractors and extension of coverage limits. Two sensitivity analyses are performed: 1) SCRTD risk preference and 2) accident rate assessments. Both the strategy and sensitivity analyses reinforce the values determined previously.

III.1 SCRTD Deductible

SCRTD's self-retention or deductible levels on both general liability and builders' risk coverages are examined to determine an optimal level for the owner-controlled insurance program. Figures 7 and 8 and Table 8 show results of the examination; both general liability and builders' risk benefit substantially from SCRTD assuming a high self-retention level. Costs indicated in both figures and tables include not only expected premium costs but also expected absorbed losses and a premium for accepting additional risk.

Figure 7 suggests a two-million (2,000,000) dollar cost savings for SCRTD participating in deductibles up to a five-hundred thousand (500,000) dollar level; extending this to two-million (2,000,000) dollars may yield an additional three-hundred thousand (300,000) dollar savings. Although all previous analyses used the higher deductible figure due to its "optimal" cost implications, a reduction to the five-hundred thousand (500,000) dollar level would have a minimum to negligible impact on total costs.

Results from the builders' risk deductible analysis do not indicate the same flexibility. In this case, assumption of five-hundred thousand (500,000) dollars as a self-retention amount leads to an approximate savings of five million (5,000,000) dollars, while a two-million (2,000,000) dollar deductible provides an additional three-million (3,000,000) dollar expected savings. By participating in builders' risk coverage self-retention to the higher level, SCRTD can expect a total savings on the order of five-million (5,000,000) dollars.

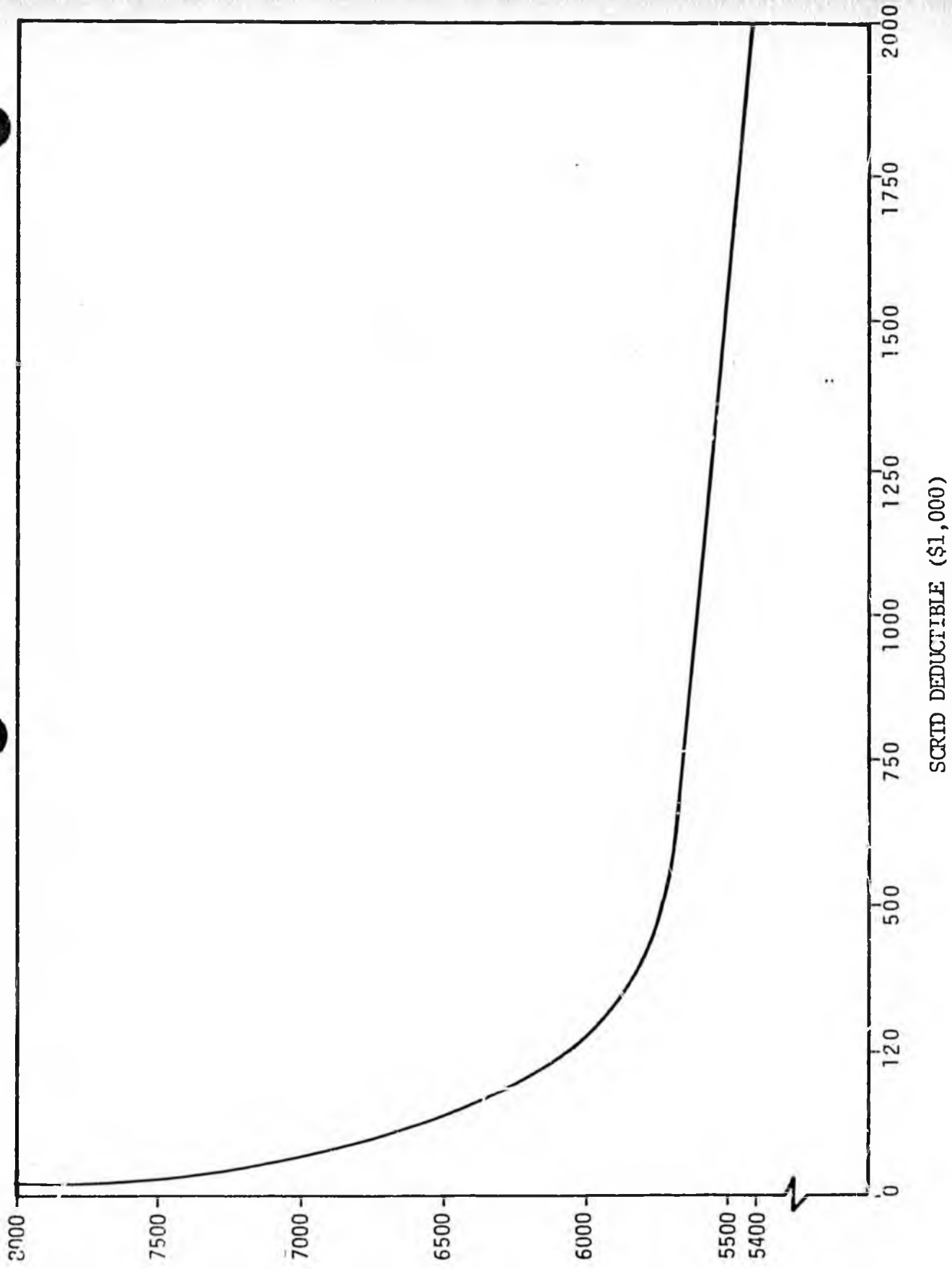


Figure 7 - General Liability Insurance Cost as a Function of SCRTD Deductible

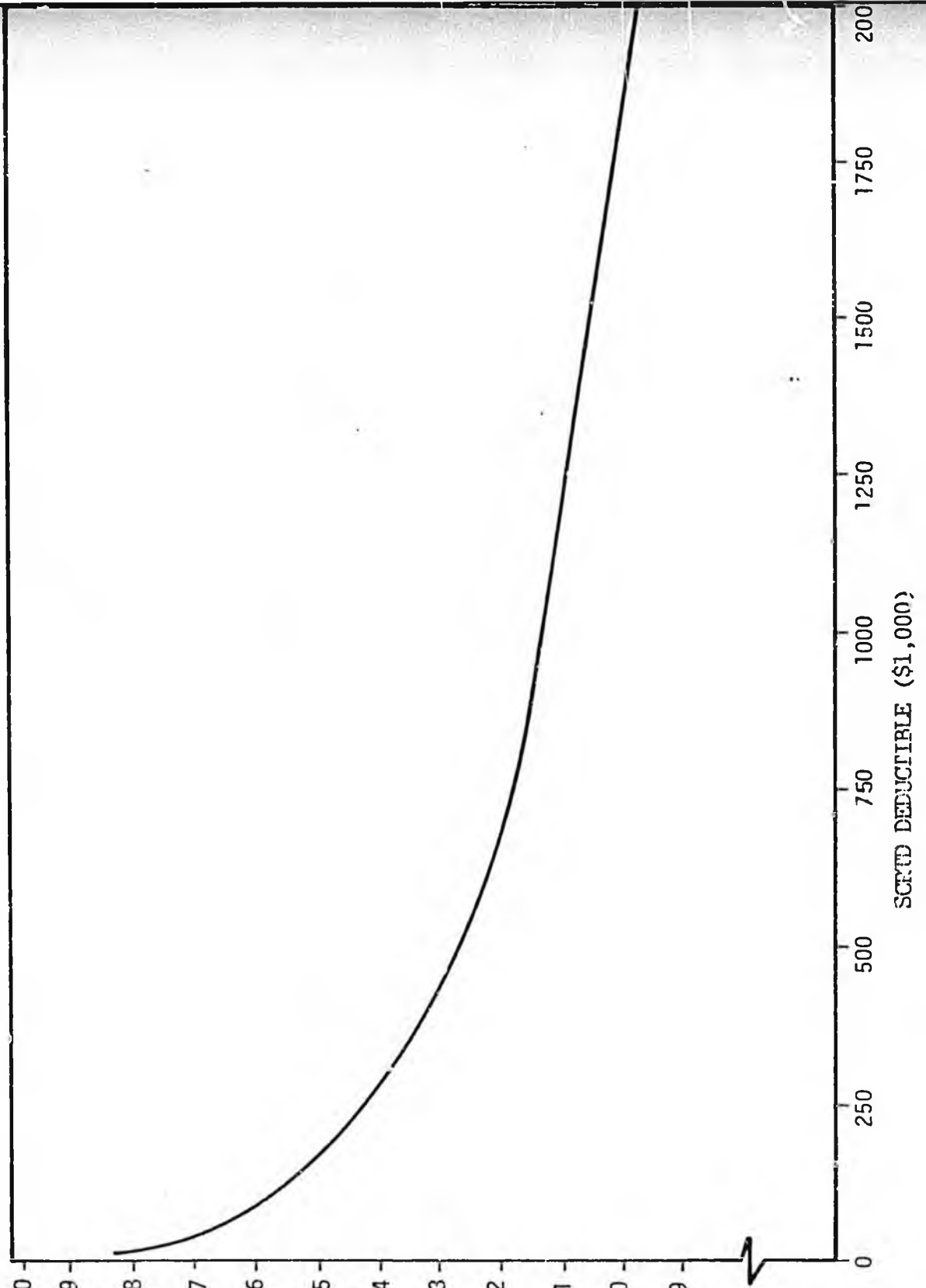


Figure 8 - Builder's Risk Insurance Cost as a Function of SCRTD Deductible

SCRTD Deductible	Total (Excl. E&O and Fee)	General Liability	Builders' Risk
[Base] 2,000,000	$ 52,832,000	$ 5,419,000	$ 19,714,000
25,000	63,072,000	7,857,000	27,516,000
100,000	60,261,000	6,724,000	25,839,000
250,000	57,943,000	6,075,000	24,169,000
500,000	56,068,000	5,702,000	22,668,000
2,000,000	52,831,000	5,418,000	19,714,000

TABLE 8 - SCRTD Deductible Levels

III.2 Contractor Deductible

One of the tools for providing incentives for good safety practices to the contractor is the specification that he/she accept a deductible amount on both general liability and builders' risk coverages. This approach appropriately assumes that concern for work-site safety can mitigate many hazards and potential losses. Care should be taken, however, to avoid a deductible so high that contractors are forced to acquire their own insurance policies; such behavior would significantly reduce the benefits derived from SCRTD's risk sharing.

Total insurance cost, excluding engineers' professional liability coverage and fees, as a function of contractor deductible levels is shown graphically in Figure 9, and is supported in more detail by Table 9. The range of cost savings extends from none at a "no contractor deductible" point to approximately one-million four-hundred thousand (1,400,000) dollars at a one-hundred thousand (100,000) dollar deductible level. Any contractor deductible beyond say twenty-five thousand (25,000) dollars would potentially encounter the contractor purchasing insurance; as stated earlier, this should be avoided. Thus, the expected savings up to this twenty-five thousand (25,000) dollar level is only one-million (1,000,000) dollars; at two-thousand five-hundred (2,500) dollars, the value used in prior analyses, anticipated savings are seven-hundred thousand (700,00) dollars. This study points out that some contractor deductible is desirable, but that a minimal amount will achieve much of the hoped for incentive effect.

III.3 Safety Incentive Program

Unlike the contractor deductible mechanism just discussed, that only penalizes poor safety performance, a safety incentive program directed toward worker safety both penalizes and rewards on the basis of safety experience. Table 10 indicates an approximate eight (8) percent additional cost reduction by using a safety incentive program; this does not consider, however, how much of the savings is returned to contractors as a safety bonus. If for example, an even-sharing rule were instituted, then this figure would devalue to an estimated three-million four-hundred thousand (3,400,000) dollars. The reader should also note that data for this analysis is independent from that previously used.

III.4 Extending Coverage Limits

Choice of coverage limits is indeed a difficult task; the basic trouble lies in assessing likelihoods and values for very rare events. The effort required to accurately perform such analysis is beyond the scope of this report. An alternate avenue, however, is to catalog expected premium costs for extending the upper coverage limits. Such a listing is presented in Table 11 and represents data collected directly from insurance industry experts.

III.5 SCRTD Risk Performance

As one might expect, SCRTD's willingness and ability to accept financial risk plays a critical role in defining the best insurance program alternative. A sensitivity analysis of total insurance program costs to SCRTD's risk preference is included; this sensitivity testing shows the robustness of pervious results to the crucial assumption on SCRTD's risk attitude.

Before showing sensitivity analysis results it is important to define the terminology used. Risk tolerance is a notion used to capture an individual's or agency's ability to take on risk. An approximate measure for risk tolerance is a value, X, at which an individual is just indifferent between taking a gamble where the gamble is a coin flip with prize X for heads and a cost 1/2X for tails; Figure 10 demonstrates this notion. For example, assume SCRTD is faced with the choice of taking no action on a water-related construction problem or taking an action which has a fifty (50) percent chance of saving two-million (2,000,000) dollars and a fifty (50) percent chance of costing an additional one-million (1,000,000) dollars; if SCRTD were just indifferent between the action involving the gamble and no action, then SCRTD's risk tolerance would be two-million (2,000,000) dollars. This risk tolerance would then be an appropriate measure for other SCRTD decisions involving risk. A more complete discussion of risk preference can be found in Raiffa (1968).

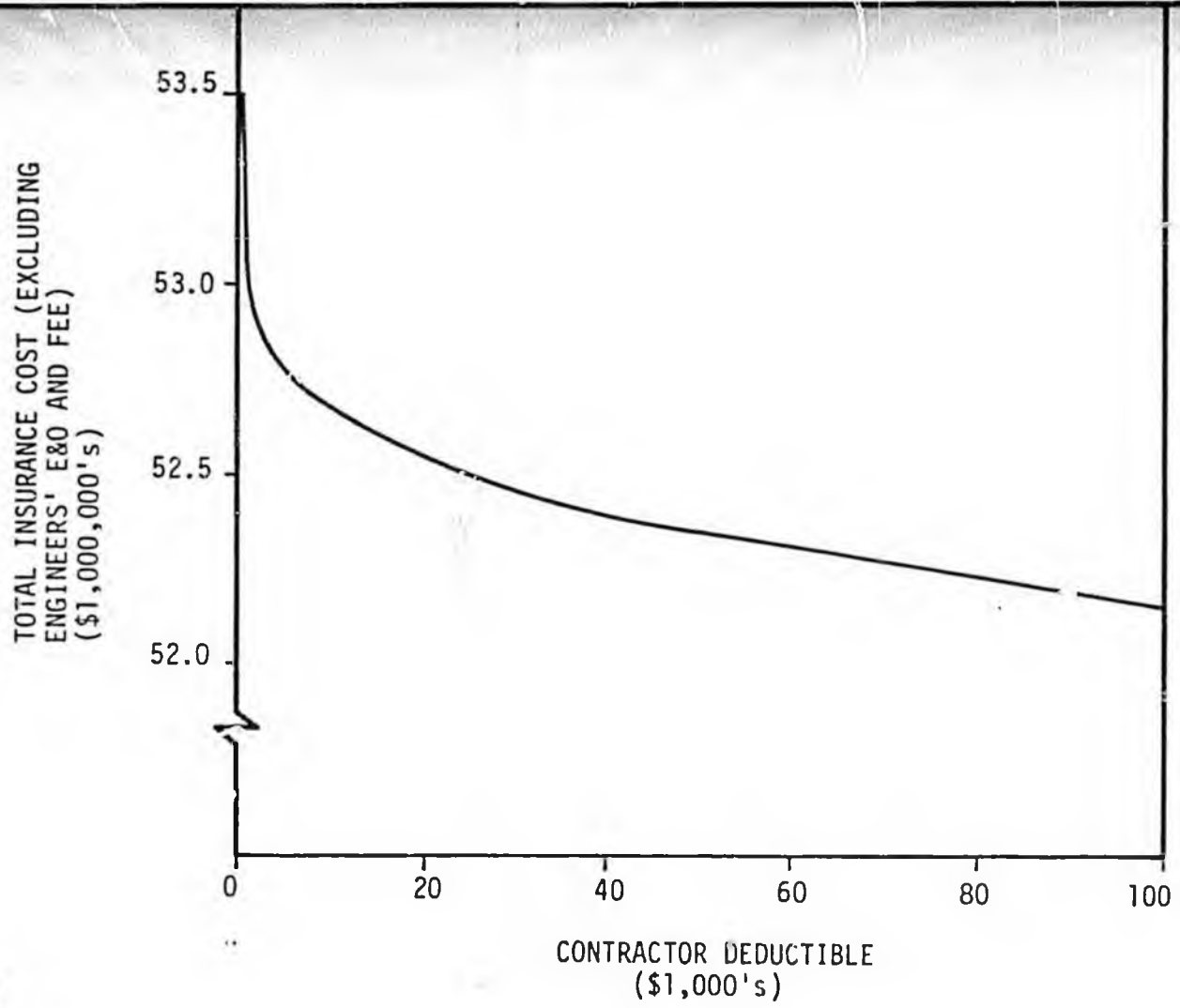


FIGURE 9 - Impact of Contractor Deductible on Total Insurance Cost

Contractor Deductible	Total (Excl. E&O and Fee)	General Liability	Builders' Risk
[Base] 2,500	$ 52,832,000	$ 5,419,000	$ 19,714,000
0	53,507,000	6,072,000	19,736,000
1,000	52,879,000	5,454,000	19,726,000
2,500	52,831,000	5,418,000	19,714,000
25,000	52,544,000	5,258,000	19,587,000
50,000	52,371,000	5,187,000	19,484,000
100,000	52,12,000	5,105,000	19,324,000

TABLE 9 - Contractor Deductible Levels

All prior analyses assumed a risk tolerance of one-million five-hundred thousand (1,500,000) dollars; evidence from current SCRID insurance practices indicate this assumed value to be reasonable. A sensitivity analysis on risk tolerance should therefore test the range of risk tolerances that still have an OCIP preferred over a conventional approach. This test is displayed in Figure 11 and supported by Table 12. Results clearly indicate that choice of OCIP is not sensitive to the assumption on SCRID risk tolerance. Risk tolerance must reduce to approximately one-hundred fifty-thousand (150,000) dollars before a conventional insurance option is preferable; this is a factor of ten difference from the assumed value. In addition, risk tolerances between five-hundred thousand (500,000) dollars and two-million (2,000,000) dollars have relatively small impacts on the insurance program cost. Selection of insurance approach is thus not sensitive to SCRID's assumed risk preference.

III.6 Accident Frequency Assessment

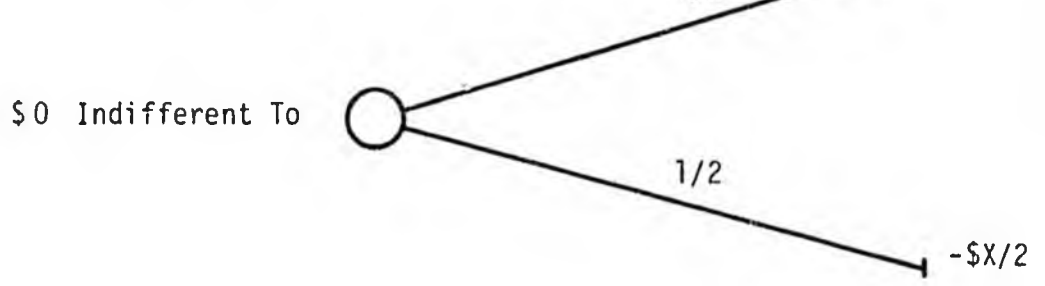
Accident frequency and severity play a dominant role in determining total insurance costs. In the situation of an owner-controlled insurance program, actual experience dictates actual costs; forecasting project safety performance is thus key to accurately estimating insurance program costs. Insurance industry experts and construction contractors are major sources for accident data assessment. Results stated thus far are based primarily on accident data assessed from Mr. James Murphy of the Fred S. James Company. A second, completely independent source was provided by Mr. Roger Thomas and his firm, Johnson & Higgins of California, and provides a verification of values already ascertained. A second sensitivity analysis of this critical data tests impacts of increasing accident frequencies above the assessed levels.

New accident data assessments lead to a significantly new distribution of program cost, but agrees within five (5) percent on total cost to SCRID. Table 13 presents a comparison of data assessments and their associated insurance items percentage distributions. Major differences are in the workers' compensation and builders' risk components. As shown previously in Table 10, much of this larger workers' compensation cost can be reduced by a safety incentive program; total costs would then deviate only slightly. An independent accident data assessment demonstrates to a reasonably high level of confidence that total cost figures are reliable enough for decision-making.

A second sensitivity analysis to test robustness of original accident data assessments reveals that accident frequency rates must be increased by approximately one-hundred sixty (160) percent before they affect selection of insurance approach; this analysis is graphically presented by Figure 12. It is improbable that assessments could be off by such a high degree. Combining this conclusion with results from the independent assessment removes concern over any possible inaccuracies in accident data values used.

Insurance Program	Worker's Compensation Cost	Total Cost
OCIP without SIP	$ 42,545,000	$ 88,031,000
OCIP with SIP	35,741,000	81,227,000
Difference:	$ 6,804,000	$ 6,804,000
% Difference:	16%	8%

TABLE 10 - Safety Incentives Program* (SIP)



X IS DEFINED AS THE "RISK TOLERANCE" OF THE DECISION MAKER.

FIGURE 10 - Risk Tolerance Definition

*Data assessments for this comparison were supplied by Johnson & Higgins of California. Total insurance cost does not correspond to previous total since this assessment is independent.

Insurance Type	Coverage Range	Premium Costs
General Liability	$ 100,000 to $1 Million	$ 16. Million
	$ 1 Million to $5 Million	$ 4.8 Million
	$ 5 Million to $25 Million	$ 3.2 Million
	$ 25 Million to $75 Million	$ 1.6 Million
	$ 75 Million to $100 Million	$ .3 Million
Builders' Risk	$ 25,000 to $5 Million	$ 14 Million
	$ 5 Million to $30 Million	$ 6 Million
	$ 30 Million to $55 Million	$ 4 Million
	$ 55 Million to $80 Million	$ 4 Million
Engineers' Professional Liability	$ 5 Million to $10 Million	$ 8 Million
	$ 10 Million to $25 Million	$ 4 Million
	$ 25 Million to $50 Million	$ 4 Million

TABLE 11 - Premium Costs for Extending Coverage Limits

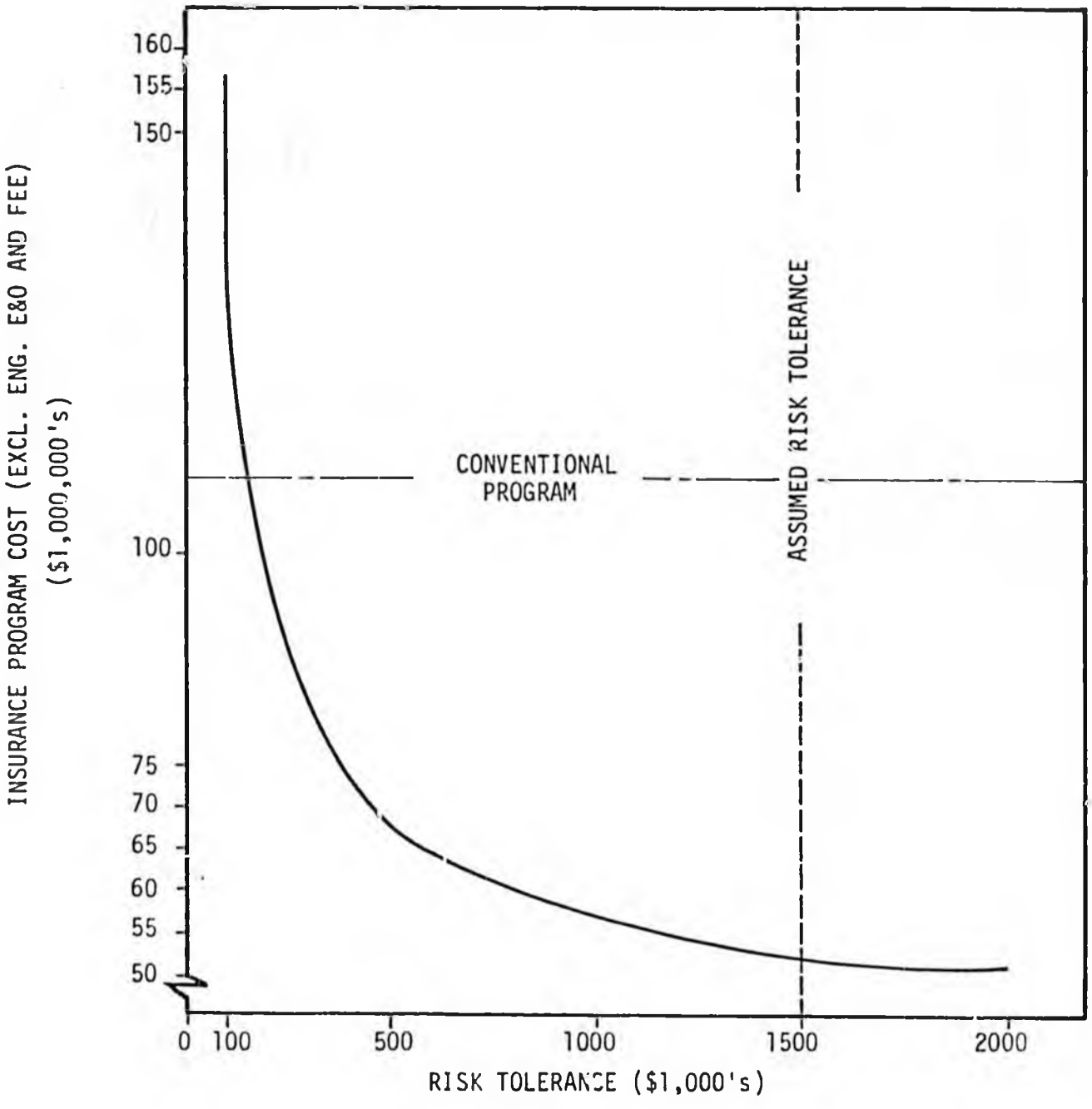


FIGURE 11 - Sensitivity Analysis of SCRID Risk Preference

SCRTD Risk Tolerance	Total Cost (Excl. E&O and Fee)
[Base] $ 1,500,000	$ 52,832,000
100,000	157,350,000
500,000	67,763,000
1,500,000	52,831,000
2,000,000	50,965,000

TABLE 12 - Sensitivity Analysis of SCRTD Risk Preference

Owner-Controlled Insurance Program

INSURANCE ITEM	NEW DATA		PREVIOUS DATA	
	COST	% OF TOTAL	COST	% OF TOTAL
Workers' Compensation	$ 42,545,000	48.3%	$ 27,699,000	33%
General Liability	$ 3,73[illegible],000	4.3%	$ 5,419,000	6.5%
Builders' Risk	$ 10,744,000	12.2%	$ 19,714,000	23.5%
Engineers' Professional Liability	$ 30,000,000	34.1%	$ 30,000,000	35.8%
Fee	$ 1,009,000	1.1%	$ 1,009,000	1.2%
	$ 88,031,000	100.00%	$ 83,841,000	100.00%

TABLE 13 - Comparison of Accident Rate Data Assessments*

*New values were provided by Johnson & Higgins of California.

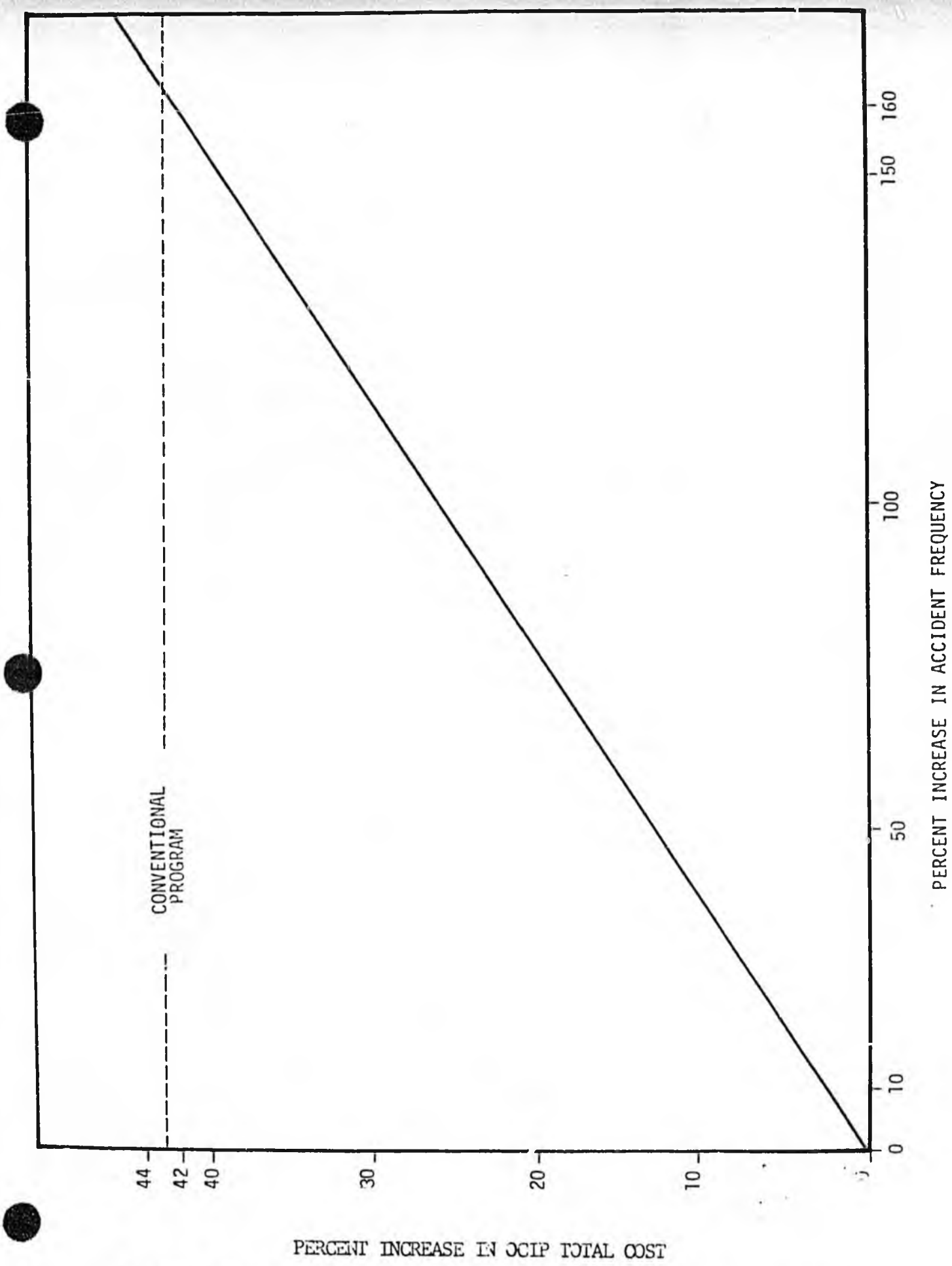


Figure 12 - Sensitivity Analysis of Accident Frequency Assessment

SECTION IV

CONCLUSIONS

Conclusions to this insurance alternatives study are organized to convey and reiterate the most important results, recommend the next actions for the Southern California Rapid Transit District, and comment generally on the report validity and applicability.

IV.1 Summary of Important Results

Of the variety of insurance approach alternatives tested, an owner-controlled insurance program proved to be most cost-effective. Workers' compensation, general liability, builders' risk, and engineers' professional liability coverages are all components of this "best" program. Savings over a conventional insurance approach are estimated to be over forty (40) percent; this corresponds to approximately three (3) percent of total construction costs. A majority of the savings derive from a loss-responsive workers' compensation policy; workers' compensation insurance costs, in turn, originate primarily in tunnel construction. A comprehensive worker safety effort directed toward tunneling activities is thus where leverage is gained in achieving anticipated cost savings.

More detailed analysis of insurance components reveals appropriate deductible levels on general liability and builders' risk policies, as well as implementation strategy for engineers' professional liability coverage. SCRTD obtains much of the expected cost reductions by participating in loss-retention at a high level; values determined for cost savings assume that SCRTD has a two-million (2,000,000) dollar deductible level on both general liability and builders' risk. Changing general liability deductible to five-hundred thousand (500,000) dollars still affords most of the foreseen benefit. Contractors, on the other hand, only share a small portion of deductibles in the optimal program. Some level of deductible responsibility should be given to contractors as an incentive device; too high a deductible level will force contractors to purchase base-level policies, thus negating cost benefits. A two-thousand five hundred (2,500) dollar deductible is chosen as reasonable and effective.

Analysis of engineers' professional liability insurance does not benefit from the same depth and rigor as the study of other insurance components. Although results arise more-or-less directly from premium estimates, they point to a major cost savings from including this coverage in an owner-controlled program. By including section designers, their coverage limits can be extended from ten-million-(10,000,000) to fifty-million (50,000,000) dollars with minor additional cost. Coverage of the first five-million (5,000,000) dollars of potential claims is considered the responsibility of the engineering firms, both primary consultants and section designers; this encourages good engineering practice and maintains an appropriate relationship between a firm and its professional liability insuror. Coverage beyond five-million (5,000,000) dollars may not be necessary for section designers;

these lower limits would implicitly place more liability on primary consultants and perhaps result in more conservative design.

The selection of insurance approach seems to be quite clear. By accepting greater risk exposure and administrative burden, SCRTD can expect to reduce insurance costs. How the District proceeds toward this goal is discussed in the next subsection.

IV.2 Recommended SCRTD Actions

SCRTD has already taken the first and perhaps most difficult step in implementing an owner-controlled insurance program, obtaining a legislative exception to permit this approach to be used on this transit project. The next step is to prepare a request for insurance administration proposals; particular care should be taken in defining expected scope of professional services. The single most important task of selecting a firm to act as insurance program administrator during specific program design and insurance marketing is necessary since it is the actual response of the insurance marketplace that fine-tunes deductible levels and coverage limits. Finally, SCRTD must monitor operation of the owner-controlled insurance program to obtain an on-going measure of its performance.

The one step mentioned above that is critical to successful implementation is evaluation and selection of insurance administrator. Evaluation criteria for firms and their proposals should include:

- Qualifications and experience of the director, of the insurance administration function,
- Service and marketing capabilities of the sponsor firm,
- Company experience with owner-controlled insurance programs,
- Technical approach to SCRTD's insurance program,
- Administrator management organization, and
- Cost

These criteria are listed in approximate order of decreasing importance. Criteria developed from other sources can be found in Appendix D; these provide a comparison to those listed above. Proposed criteria above concentrate on personal and company capabilities; much less emphasis is placed on design and operation of the insurance program and cost. SCRTD assures overall program quality by tightly defining "Scope of Services" and by continuous participation in program evolution.

Insurance administrator selection should occur at least five (5) months prior to start of major construction activity; this timing strengthens chances of realizing projected savings. Earlier selection would allow active participation of the insurance administrator in establishing contract general conditions and in overall review of program risk management.

IV.3 General Comments on Study

How far should SCRTD trust these results? The comparative studies such as which program is most cost-effective and relative impacts of deductible levels should be very reliable. Percentage differences and relative alternative rankings are accurate enough for confident decision-making. Absolute values, however, are more suspect. Detailed information is lacking in several important areas. One would normally expect an OCIP to be four (4) to six (6) percent of total construction cost. This study's estimate of approximately four (4) percent is at the low end of the anticipated range; caution in accepting absolute figures is therefore advised.

No specific discussion has been presented on management of reserve accounts; any insurance program with a large owner loss-retention such as an OCIP will typically set aside an expected loss amount for each claim presented. It may be many months before an actual award is made. Interest gained on these reserve accounts has not been factored into this analysis. To properly consider these investment effects it would also be necessary to consider timing of other financial flows of an OCIP. To a first order of analysis interest earned tends to balance delays in receiving dividends from a loss-responsive workers' compensation policy, thus a time-based study of cash flows does not appear necessary. Estimated costs quoted in this analysis can be considered as being in 1986 dollars.

Selection of a comprehensive OCIP and use of high SCRTD loss-retention levels are the two most important conclusions of this study; both are eminently defendable. Section III contains a wide variety of sensitivity analyses designed to test the validity of these results; all provide reinforcement to the accuracy of the comparative studies. Southern California Rapid Transit District should implement an owner-controlled insurance program for the construction of the Metro Rail Project; such an action can be taken with assurance and confidence.

BIBLIOGRAPHY

Ashley, David., "Coordinated Insurance for Major Construction Projects," Journal of the Construction Division, ASCE, Vol. 106, No. C03, Proc. Paper 15697, September, 1980, pp. 307-313.

Ashley, David B., "Preliminary Insurance Program Selection for Urban Mass Transit Project Construction," Report to Niagara Frontier Transportation Authority, April 20, 1981.

Ashley, David B. and Parkinson, Thomas W., "Analysis of Construction Insurance Alternatives for Niagara Frontier Transportation Authority's Light Rail Rapid Transit Project", Report to Niagara Frontier Transportation Authority, November 19, 1979.

Barrett, James E., "Insurance for Urban Transportation Construction," U.S. Department of Transportation, Urban Mass Transportation Administration, Report No. UMTA-MA-06-0025-77-13, 1977.

Derk, Walter T., "Insurance for Contractors," Fred S. James & Company, Inc., Chicago, IL., 1974.

Raiffa, Howard, "Decision Analysis-Introductory Lectures on Choices Under Uncertainty," Addison-Wesley, Reading, MA. 1968.

APPENDIX A

The Insurance Decision*

*Most of the material in this appendix is extracted from "Analysis of Construction Insurance Alternatives for Niagara Frontier Transportation Authority's Light Rail Rapid Transit Project," David B. Ashley and Thomas W. Parkinson, November 19, 1979.

Characteristics of the Decision

Insurance is a hedge against risk. By paying a fixed, predetermined premium, one can avoid the possibility, however, unlikely, of large catastrophic losses. At the very worst, such losses could easily bankrupt an economic concern. In any case, the uncertainty surrounding the actual amount of losses incurred makes planning difficult.

This protection, however, comes with a price. The insurance premium includes an amount equal to the expected losses as well as a factor termed production loading. Production loading, which generally ranges from 40-60% of the premium, covers overhead, administrative costs, taxes, and pro-fit. The decision to buy insurance involves the balance between paying this production loading to the insurer and incurring the risks.

Consider a loss-responsive workers' compensation policy in the OCIP case. Under the loss-responsive plan, premiums are tied directly to loss experience. The loss ratio, the ratio of loss dollars paid out to premium dollars taken in, resulting from a project can never be known beforehand, although insurance carriers use 60% as an average. The effect of the safety program would reduce this average to about 51%. The actual loss ratio, however, might range from 30% to 80%. Figure A1 shows the distributions on loss ratio with the safety program.

At a loss ratio of about 67%, the costs of the retrospective policy will equal the costs of a fixed-rate policy. There is an 11% chance (shown as shaded area in Figure A1) that the loss-responsive policy would cost more than the fixed-rate. Thus, while the loss-responsive policy will be cheaper on the average, it may not necessarily be cheaper in actuality.

Obviously, the uncertainty in the cost of the loss-responsive policy is undesirable. It is entirely reasonable to prefer a fixed-rate policy in spite of the fact that the average cost of the retrospective policy would be cheaper. If the cost of the fixed-rate policy were varied up and down, there would be a point at which the Southern California Rapid Transit District (SCRTD) would be indifferent between the two policies. The differences between the fixed cost of the standard policy and the average cost of the retrospective policy is termed the risk premium. This risk premium is the amount of money the SCRTD will forego, on the average, in order to eliminate the risk of yet greater losses.

The concept applies directly to the determination of a proper deductible size. A large deductible will decrease the production loading cost but will increase the risk. A proper deductible level is that size which minimizes the total of production loading costs and risk premium, with the risk premium reflecting SCRTD's ability to absorb risk.

The Costs of Insurance

Most comparative studies of insurance compare only premium costs. Yet premiums are only part of the problem. To make any decision between OCIP and

FIGURE A1 - Distribution of Loss Ratio With Safety Program

conventional insurance packages, one must consider all effects on the SCRTD's cash flows. These cash flow effects include not only the direct cost of insurance to the SCRTD, but also the indirect costs reflected in the contractor bids.

Consider a contractor's behavior under a conventional insurance program. A contractor's normal mode of operation is to determine his expenses, adding on top a profit share. Thus the cost of the insurance item to the authority is the cost of the insurance itself plus the associated profit share. The size of the associated profit share is difficult to determine. The only sure method would be to obtain two bids, one with and one without the insurance item.

As such information is presently unavailable, we must make some reasonable inferences as to the contractor's behavior must be made. First, the insurance premium must be pre-paid by the contractor. Thus, he will add a certain margin to cover the cost of capital tied up. If he takes a deductible, he will have some expected amount of absorbed losses. This amount he will pass on to the District. While the premium itself is generally fixed and incurs no risk, the absorbed losses from the deductible are uncertain. To cover this risk, the contractor will tack on a margin representing his risk premium.

If the contractor requires subcontractors to purchase their own insurance, the situation is even more complicated. The subcontractors will alter their bids accordingly. In turn, the contractors add another mark-up in calculating their bids. Hence there are two profit margins added to the premium itself. Even if the contractor insures his subcontractors as part of a package, in some cases they obtain their own insurance, and thus end up with duplicate coverage.

Under an owner-controlled insurance program, the contractor does not purchase the insurance. He will still have his absorbed losses accruing from the deductible. In addition, because the OCIP insurer is not his regular insurer, he anticipates that some percentage of the claims will be declared uninsurable, leaving him liable. Again, this expectation is reflected in the bid.

SCRTD itself faces some of the same concerns. Insurance premiums in the OCIP case are an obvious expense. If SCRTD were to take on some level of deductible, then it would have some amount of absorbed losses, including handling fees passed on by the insurer to cover the costs of processing third-party claims. Because of the uncertainty resulting from the deductibles or retrospective policies, SCRTD would also incur some risk premium. Finally, there is the cost of the insurance administrator to manage the OCIP program.

The sum total of all these figures constitutes the cost of insurance. This cost includes items not normally considered in comparative studies. In addition, these items do not correspond directly to budget and bid line items. Yet, because this analysis considers total effect on cash flow, this "total" cost is the most useful value for insurance decison-making.

Determination of Insurance Premiums

An understanding of the structure of insurance premiums is essential to deciding between OCIP and conventional coverage. In the study four main insurance items are considered: workers' compensation, comprehensive general liability, builders' risk and engineers' professional liability. The forces affecting the premiums are different for each item.

Workers' Compensation --Workers' compensation is the most structured of the four. Book rates for each trade are set by law. For the decision between OCIP and conventional coverage, the actual rates are much less important than the differential effects between the two programs. The following representative rates were used:

Tunnel Line	$15.17/$100
Systems	$23.14/$100
Stations (Cut and Cover)	$ 7.00/$100

These manual premiums are modified by the contractor's experience factor to obtain the standard premium. Depending on the amount of premium dollars generated, these standard premiums may be reduced up to 14 or 16 percent (depending on whether the insurer is a stock or mutual company).

A loss-responsive policy may be attractive under an OCIP. In this case, the premium is not fixed, but rather depends on the loss ratio. The premium is calculated as follows. SCRTD under any circumstances pays a basic premium (13% of the standard premium) to cover certain overhead and profit charges. Added to this are all losses plus a handling fee to cover claim investigation and adjustment (10% of the loss total). These costs are further increased by a tax multiplier of 1.04. The total workers' compensation premiums for the loss-responsive policy work out to be slightly less on the average. Reucued losses as a result of the safety program add significantly to savings.

General Liability -- General liability coverage is a wide open market for insurance carriers. Premiums depend strongly on the individual circumstances on each project. Furthermore, there are two or more layers of coverage (primary and excess) which must be marketed and quoted separately.

General liability rates depend strongly on the volume of premium dollars generated, not only from the general liability coverage itself, but from workers' compensation premiums as well. Therefore, including general liability and workers' compensation together in the same package will result in lower premiums than would marketing the general liability coverage by itself. This volume effect is quite significant.

On top of these volume effects are the effects of the fluctuating market. The peculiar incentives of insurance company economics produce a regular cycle in insurance rates. In favorable times, insurers will lower rates in order to attract premium dollars for investment. While the investment returns create an initial cash surplus, the inevitable losses produce a cash crunch. When this happens, the insurers decrease their volume, raise their rates, and attempt to quickly rebuild their cash position.

The insurance market currently appears to be in an approximately nine to ten year cycle compared to historical five-year cycles. A relative peak in premium rates should occur around 1985 or 1986. Rates for the excess layer at the peak should be about 40% higher than those at the bottom of the trough. Because the rate increases are intended to produce a quick cash recovery, there is a tendency to have larger increases on those policies generating the most premium dollars. Thus policies with small deductibles will encounter proportionately larger increases than those with high deductibles. In fact, the increases for such policies can be 50% greater than the increases on excess coverage (on a dollar-for-dollar basis).

Lastly, because general liability rates are somewhat negotiable, the potential effects of a good safety program can exert a downward influence on premiums.

Builders' Risk -- The effects on builders' risk are similar to those on general liability, but are less marked. Again the builders' risk coverage is composed of a primary and one or more excess layers.

As with general liability, builders' risk premiums depend somewhat on the volume of premium dollars. In this case, however, the rates are not coupled to premiums generated by workers' compensation or general liability coverages. Also the effect is much smaller; the rates for the smallest anticipated contracts would be approximately 40% greater than for the project as a whole.

Market conditions still play a major role. Timing is similar to the general liability case; the difference between the lowest an highest rates is also 40%. Unlike workers' compensation and general liability, however, builders' risk premiums are unaffected by any potential safety program.

APPENDIX B

DETAILED COMPARISON OF SCRTD INSURANCE ALTERNATIVES

APPENDIX B. Detail Comparison of SCRTD Insurance Alternatives[1]

Comparison of Base Cases

	Workers' Compensation		General Liability		Builders' Risk		Total[2]	
	Conventional	OCIP	Conventional	OCIP	Conventional	OCIP	Conventional	OCIP
1 Expected Losses	0	9402.5	3855.72	241.372	6126.77	2733.31	9982.49	12457.2
2 Risk Premium	0	0	202.5	137.099	1552.25	1119.49	1754.75	3257.39
3 Handling	0	12560.5	2313.43	144.023	9190.16	4100	11503.6	16813.3
4 Total Premium	53049.9	22051	10942.4	548.26	31627.5	11119	95619.8	359382
5 Broker's Fee	0	0	0	0	0	0	0	0
6 Uninsurable Losses	0	0	0	43.4	0	19.24	0	82.64
7 Absorbed Losses	0	0	802.46	890.13	100.456	100.498	990.916	900.63
8 Risk Premium	0	0	.1206	.11669	.0204	.0204	.149	.137
9 Cancellation	0	0	0	0	0	0	0	0
10 Profit	6365.99	0	1313.09	0	3795.3	0	11474.4	0
11 Total Cost passed to SCRTD	59971.9	22051	13309.4	1391.91	36004.1	11486.7	109365.4	36929.6
12 Absorbed Losses	0	0	0	3282.27	0	4232.8	0	7515.11
13 Risk Premium	0	5648	0	116.747	0	1401.41	0	7465.65
14 Handling Cost	0	0	0	320.227	0	592.597	0	920.824
15 Total	59971.9	27699	13309.4	5410.66	36004.1	19713.5	109365.4	52831.2

Insurer

Contractor

SCRTD

[1]All values in thousands of dollars.

[2]Total excludes engineers' professional liability insurance and insurance administrator fee.

APPENDIX C

ENGINEERS' PROFESSIONAL LIABILITY

INSURANCE COVERAGE COSTS

Option	Estimated Component Cost[1]	Estimated Option Total Cost[1]
1. All insurance placed conventionally (Limits: Primary consultants to $50 Million; section designers to $10 Million) [2,3]		$ 38 Million
2. OCIP (except section designers)		
. Primary consultant to $5 Million	$ 7 Million	
. Section designers to $50 Million [2,4]	$ 24 Million	
. SCRID, $5 Million to $50 Million for primary consultants only	$ 8 Million	
		$ 39 Million
3. OCIP (including section designers)		
. Primary consultant to $5 Million	$ 7 Million	
. Section designer to $5 Million	$ 7 Million	
. SCRID, $5 Million to $50 Million for both	$ 16 Million	
		$ 30 Million
4. OCIP (except primary consultants)		
. Primary consultant to $50 Million	$ 24 Million	
. Section designers to $5 Million	$ 7 Million	
. SCRID, $5 Million to $50 Million for section designers only	$ 8 Million	
		$ 39 Million

Option 1 is used throughout this analysis as the conventional base case, while Option 3 represents the OCIP best option. They are not strictly comparable since the conventional base uses a section designer coverage limit of $10 Million and the OCIP uses $50 Million. Each appears, however, to represent most likely choices for each insurance approach; equating coverage limits would increase OCIP cost advantages.

---

[1]All costs are based on premium rate assessments supplied by Mr. James Murphy of Fred S. James Co. Estimates assume a $ 2 Billion construction cost and a $250 thousand deductible for engineering firms.
[2]It may be difficult for section designers to obtain coverage to $50 Million.
[3]By increasing section designer coverage to $50 Million an estimated cost increase to $48 Million will occur.
[4]By lowering section designer coverage to $10 Million a cost reduction to $29 Million can be achieved.

APPENDIX D

EVALUATION CRITERIA FOR INSURANCE ADMINISTRATOR PROPOSALS

Appendix D consist of two major components: D.1 SAMPLE EVALUATION CRITERIA FROM OTHER SOURCES and D.2) SUGGESTED SCRTD PROPOSAL EVALUATION PROCESS.

D.1 SAMPLE EVALUATION CRITERIA FROM OTHER SOURCES

This Section contains two sets of criteria for insurance administrator proposal evaluation. The first list was used by the Mass Transit Administration (MTA) in Baltimore, Maryland, to select their insurance intermediary. A second list was solicited from Johnson & Higgins of California.

MTA PROPOSAL EVALUATION CRITERIA

Criteria	Weight % *
1. Quality and Responsiveness of Proposal a. Completeness b. Organization & Conciseness of Material c. Deviations from RFP	5
2. Technical Approach a. Identification of Problems b. Reasonableness of Technical Approaches c. Use of Imagination d. Logic of Plan	10
3. Managerial Approach a. Organization Makeup b. Adequacy of Procedures c. Use of Resources d. Adequacy of Schedules	10
4. General Capabilities a. Experience (companies & Individuals) b. Reputation (quality of work, schedule, cost, degree of cooperation)	20
5. Staff and Facilities a. Manpower (numbers & skills) b. Facilities (size, type, condition)	20
6. Cost Proposal a. Reasonableness of Cost b. Reasonableness of Fee	25
7. General Evaluation	5

*"Weight % does not add up to 100 %.

JOHNSON & HIGGINS SUPPLIED CRITERIA

These criteria relate more to capabilities of the responding firm than to proposal evaluation.

1. Depth and professional quality of local safety, fire prevention and claims staff.

2. Regional service capabilities relative to finance plan structure, insurance marketing and insurance marketplace penetration.

3. Project management system.

4. Experience with Wrap-up insurance programs [owner-controlled insurance programs] including administration, bid specifications and on-going related services.

D.2 SUGGESTED SCRID PROPOSAL EVALUATION PROCESS

The following presentation is modeled after the current SCRID proposal evaluation process. It takes into account lessons learned from other transit systems using an owner-controlled insurance approach and SCRID-specific insurance program characteristics. The weightings provided are given as ranges rather than single values; final determination of weighting values must come from SCRID management.

D.2.1 PROPOSAL EVALUATION PROCESS

The Proposals will be evaluated as follows:

The overall evaluation process will be performed by a Proposal Review Board (PRB). The evalution criteria are set forth at the end of this sub-section and will be the sole basis for determining the technical acceptability of proposals. The technical presentation should be specific and complete in every detail.

A. Qualification and experience of the Director of the insurance administration function.

   i) Does the proposed Director have direct experience in managing an owner-controlled insurance program?

   ii) Does his/her experience include claims administration, insurance marketing and safety program administration?

   iii) What are the general administrative capabilities of this Director?

   iv) Does the Director's experience or educational background include significant exposure to construction or engineering disciplines?

B. Service and Marketing Capabilities of the Sponsor Firm

   i) Does the firm have internal capabilities for marketing coverage to potential insurance carriers?

   ii) What is the firm's access to "off-shore" insurance markets?

   iii) What are the service and administrative capabilities of local offices of the firm ?

   iv) What are the service and administrative capabilities of the firm's main office ?

C. Firm Experience with Owner-controlled Insurance Program

i) What are the numbers and sizes of owner-controlled insurance programs that the firm has supervised?

ii) What experience does the firm have with owner- controlled insurance programs for rapid transit construction project?

iii) What experience does the firm have in implementing owner-controlled insurance programs in California? If no direct experience, does the firm exhibit detailed knowledge of California laws applicable to structuring and implementing owner-controlled insurance programs?

iv) If the insurance administrator is proposed as a joint venture of firms, how do the skills and experiences of the individual firms complement each other?

D. Technical Approach to SCRTD's Insurance Program

i) What insurance coverages does the respondent suggest including in the program?

ii) What is the proposed scope of services?

iii) What is the proposed financial plan, including reserve management?

E. Insurance Administrator Organization/Management Plan

i) What is the insurance administrator's organization structure?

ii) Which of the proposed scope of services items are to be performed by staff specific to the Metro Rail Project?

By regional office support? By main office support?

iii) What are the skills and experiences of staff designated for claims administration? Safety Program Administration?

F. Other

i) MBE Participation

ii) Local Participation

iii) Timing of scope of service items

iv) Completeness of response

D.2.2. EVALUATION CRITERIA

Each element of the evaluation of criteria will be based on a rating of 1 to 10 points using the following schedule:

(1) Evaluation Element	(2) Numerical Rating (1-10)	(3) Weight*	(4) Col. 2 x Col. 3 = Weighted Rating
A. Qualifications of Director		(2.5 - 4.0)	
B. Capabilities of Firm		(2.0 - 3.0)	
C. Firm's Experience with Owner-Controlled Insurance		(0.8 - 2.0)	
D. Technical Approach		(0.5 - 1.5)	
E. Organization/Management Plan		(0.5 - 1.5)	
F. Other		(0 - 1.0)	
		TOTAL	

D.2.3 SELECTION

The respondents whose written proposals are rated highest by the Proposal Review Board will be asked to make oral presentations of approximately one hour to the Proposal Review Board. The Proposal Review Board will then make recommendations to the District Board of Directors. The District Board of Directors may desire to interview the top-rated responsents before authorizing the Project staff to enter into contract negotiations.

* Weights should be selected from the range such that maximum possible "Weighted Rating = 100.

APPENDIX E

SUMMARY INSURANCE COSTS

AS A FUNCTION OF CONSTRUCTION COST

APPENDIX E

CONSTRUCTION COST	CONVENTIONAL INSUR. COST	OCIP COST	DIFFERENCE	SCRID DIRECT COST	SCRID CONTINGENCY RESERVE
$ 1,000,000,000	$ 73,683,000	$ 42,425,000	$ 31,258,000	$ 34,483,000	$ 7,951,000
1,200,000,000	88,419,000	50,708,000	37,711,000	40,572,000	9,541,000
1,400,000,000	103,156,000	58,991,000	44,165,000	47,166,000	11,131,000
1,600,000,000	117,892,000	67,275,000	50,617,000	53,759,000	12,722,000
1,800,000,000	132,629,000	75,558,000	57,071,000	60,353,000	14,312,000
2,000,000,000 [BASE]	147,365,000	83,841,000	63,524,000	66,947,000	15,902,000
2,200,000,000	162,102,000	92,124,000	69,978,000	73,541,000	17,492,000

SUMMARY INSURANCE COSTS AS A FUNCTION OF CONSTRUCTION COST

A SPECIAL REVIEW OF THE ALASKA POWER AUTHORITY INSURANCE PROGRAMS ADMINISTERED THROUGH THE ALASKA POWER AUTHORITY AND THE DEPARTMENT OF ADMINISTRATION DIVISION OF RISK MANAGEMENT

June 29, 1982

Chairman, Alaska Power Authority	Chuck Conway
Commissioner, Department of Administration	Carole J. Burger

STATE OF ALASKA

DIVISION OF LEGISLATIVE AUDIT

STATE OF ALASKA

THE LEGISLATURE

BUDGET AND AUDIT COMMITTEE

AUDIT DIVISION
POUCH W—ALASKA OFFICE BUILDING

JUNEAU, ALASKA 99811

June 29, 1982

Members of the
Legislative Budget and Audit Committee:

In accordance with the provisions of Title 24 of the Alaska Statutes, the attached report is submitted for your review:

A SPECIAL REVIEW OF THE
ALASKA POWER AUTHORITY
INSURANCE PROGRAMS
ADMINISTERED THROUGH THE
ALASKA POWER AUTHORITY AND THE
DEPARTMENT OF ADMINISTRATION
DIVISION OF RISK MANAGEMENT

June 29, 1982

Gerald L. Wilkerson, CPA
Legislative Auditor
Division of Legislative Audit

TABLE OF CONTENTS

PURPOSE OF THE REVIEW

In accordance with the provisions of Title 24 of the Alaska Statutes and a special request of the Legislative Budget and Audit Committee, we have reviewed certain issues relating to an insurance "wrap-up" program for Alaska Power Authority construction projects. Our review encompassed activities of the Alaska Power Authority (APA) and the Department of Administration, Division of Risk Management, as well as those of insurance brokers and agents handling APA accounts.

BACKGROUND

In the Spring of 1981, legislation was enacted that broadened the scope of APA's authority and responsibility for administering Alaska's energy program. APA became directly involved in the construction and acquisition of power projects throughout the State.

The first construction project to come on line was the Tyee Lake hydroelectric project. This project, located approximately 40 miles southeast of Wrangell, was to be constructed in three phases. Bids for Phase I were solicited in early June 1981, with construction scheduled to begin the following October.

The Request for Proposal (RFP) for Tyee Lake contained generally standard wording in which the burden for purchasing and maintaining adequate insurance was placed on the contractor. Simultaneous to the Tyee Lake bid process, APA also sought advice from the Division of Risk Management about the insurance requirements and liability ramifications of APA contracts in general. The Division of Risk Management in turn consulted with the State's major insurance broker, Marsh & McLennan Inc. During July 1981, a series of discussions and correspondence ensued among APA, Risk Management, Marsh & McLennan Inc. and various consultants, which ultimately resulted in a decision to substitute an owner provided insurance program for contractor provided insurance on the Tyee Lake project. That is, rather than requiring the contractor to purchase insurance and to see that his sub-contractors do likewise, the owner (APA) would "wrap-up" all parties and exposures into a comprehensive safety and insurance program.

Correspondence between Marsh & McLennan Inc. and APA indicates that the decision to employ a wrap-up program for Tyee Lake was reached during the latter part of July. Bid openings were scheduled for August 11, 1981. Given the time constraints, APA elected to have contractors submit bids with insurance costs included, as specified by the RFP. Upon the award, APA would then determine whether the contractor would agree to an owner provided insurance program and, if so, would negotiate an amount to back out of his bid.

Bids were opened as scheduled on August 11, 1981. Proposals were evaluated and the contract eventually awarded on September 25 to the joint venture of Southeast Drilling Co., Inc. - Harrison Western Corp. (SE-HW) for a bid of $44,952,000. SE-HW subsequently agreed to owner provided insurance, and a change order was signed October 20 reducing the contract amount by $1,798,867.

On October 28, 1981, subscription policies effective October 1 for Phase I of the Tyee Lake project were issued by the two firms that handle the State's master insurance policies: Marsh & McLennan Inc. and Corroon & Black/Dawson & Co., Inc. During November and December, the brokers and the Division of Risk Management worked out details on how to structure and administer the wrap-up program. This involved arranging for claims adjusting, safety consulting, actuarial and related services, as well as negotiating with underwriters for insurance placements. In addition, the two brokerage firms worked out internal agreements on how to jointly handle the APA account.

The contract between APA and the brokers to provide the above services was not finalized until December 22, 1981. This contract, backdated to October 1, 1981, provides for APA to use Risk Management as a consultant for risk management services, and for Marsh & McLennan Inc. and Corroon & Black/Dawson & Co., Inc., to provide for specified services necessary to administer the Alaska Power Construction Program (APCOP). Contract terms are stated in general language, but the appendix on consideration clearly limits the contractual agreement to the SE-HW portion of the Tyee Lake project. Consideration for this contract was to be $1,790,000, but a premium discount of $100,000 was subsequently applied. First payment on the contract in the amount of $540,000 was made December 23, 1981.

ISSUES AND ALLEGATIONS

During the Spring of 1982, several issues and allegations were raised about the series of events outlined in the preceding paragraphs. Various members of the Legislature, representatives from interested professional groups, and State administrators questioned whether owner "wrap-up" was an appropriate or allowable insurance method for State agencies. Specific allegations surfaced regarding the procedures for bidding and awarding the Tyee Lake construction and insurance contracts, and the brokers' and Division of Risk Management's administration of the APA insurance programs.

We have not included in this report a general discussion of the pros and cons of wrap-up insurance. This issue was the subject of considerable debate during the last session of the Legislature and resulted in the passage of SB 831, which prohibited State agencies from providing insurance to contractors awarded State construction projects. SB 831 was vetoed by the Governor because he did "not find this prohibition in the best interests of the State". Whether or not this legislation is pursued is a matter of legislative and executive decision during the next session.

We have, however, examined the various allegations and legal issues that have been raised. A discussion of each issue and our findings thereon follow:

A. Contractual Procedures - Tyee Lake Construction Contract

No allegations have been raised and we found no improprieties on the bidding and preliminary award of the Tyee Lake - Phase I contract to SE-HW. Allegations have been raised, however, that SE-HW failed to provide proof of adequate insurance as required by RFP, and that as a result a change order was issued wherein APA would provide insurance instead.

We found that the insurance provided by SE-HW was inadequate, but that this was due to misunderstanding rather than the fact that SE-HW was uninsurable. The chronology of events is outlined below:

09/10/81 APA Board approves contract award to SE-HW.

09/11/-- Negotiations begin between SE-HW and Division of Risk Management on amount of bid attributable to insurance. Dates uncertain, but no indication that negotiations pre-date Board approval. APA copied on at least one related letter dated 09/21/31.

09/15/81 Contract award challenged by Pacific Ventures, a lower bidder rejected because proposal did not conform to RFP. Temporary restraining order placed.

09/25/81 Temporary restraining order lifted. Notice of Award sent to SE-HW, subject to certain requirements including proof of adequate insurance. This letter signed by same APA individual involved in earlier insurance discussions with Marsh & McLennan Inc. and Risk Management, and copied on 09/21/81 letter regarding cost of contractor insurance.

10/08/81 SE-HW responds to Notice of Award, signs contract, and supplies performance bonds and certificates of insurance.

10/16/81 APA acknowledges receipt of signed contract but notifies SE-HW that performance bonds deficient and insurance inadequate. Letter to SE-HW states: "Pursuant to advice of the State Division of Risk Management, the Alaska Power Authority proposes to provide a wrap-up insurance program . . . . A change order has been prepared to effect these modifications . . . ." SE-HW given option of agreeing to change order or supplying evidence of adequate insurance.

10/20/81 Change Order No. 1 substituting owner provided insurance for contractor provided insurance and decreasing contract by $1,798,867 signed.

10/20/81 Notice to Proceed issued.

From discussions we have held with involved parties, it appears that by the time SE-HW responded to the 09/25/81 tentative Notice of Award, an understanding had been reached that APA would be providing insurance coverage and thus little attention was given to evidences of insurance. There is no indication that SE-HW was uninsurable.

There is some question as to whether Risk Management exceeded its authority by dealing directly with the contractor without APA's knowledge and before APA had officially proposed the idea of owner provided insurance. We have received conflicting information about this. Most likely, this was a case of bad communication both within APA and between APA and Risk Management.

B. Contractual Procedures - APA Brokerage Contracts

To date, all APA insurance reviews or brokerage services have been performed by Marsh & McLennan Inc. and Corroon & Black/Dawson & Co., Inc. (A schedule of APA contracts with and payments to the brokers is presented in Appendix A). This has generated considerable controversy, with specific questions raised about:

- Meetings of Risk Management, APA, and Marsh & McLennan Inc. prior to Tyee Lake brokerage contract.
- Awarding of Tyee Lake contract to Marsh & McLennan Inc. and Corroon & Black/Dawson & Co., Inc. without competitive bid.
- Expectations by brokers that Tyee Lake contract would be expanded to future APA construction projects.
- Expansion of broker's involvement to cover completed or acquired projects.
- Awarding of APA insurance review contract to brokers without competitive bid.

Each of these areas is discussed below.

Pre-contract meetings: It is unclear when wrap-up discussions first took place and who it was that first proposed the concept. Our review indicates, however, that wrap-up on Tyee Lake was not explicitly agreed to until late July, when representatives from APA, Risk Management, and Marsh & McLennan Inc. met in Marsh & McLennan's Seattle offices. There is no evidence to suggest that there was anything conspiratorial about this meeting, or that the decision by APA and Risk Management to utilize owner provided insurance was anything more than an attempt to explore economical insurance alternatives. Undoubtedly, Marsh & McLennan Inc. wished to secure the State's business, but as a profit making firm this is only normal.

Awarding of Tyee Lake contract without competition: In our July 1980, performance review of the Division of Risk Management, we criticized the Division for not utilizing competitive procedures in its selection of brokers. During FY'81, the Division went through an extensive broker selection process, and in May 1981, Marsh & McLennan Inc. and Corroon & Black/Dawson & Co., Inc., were contracted with to provide risk management and insurance programs for the State. When APA sought advice from Risk Management about the insurance ramifications of its newly expanded role, then, it was reasonable that Risk Management in turn sought advice from its primary consultant, Marsh & McLennan Inc.

The question is whether it was also reasonable to contract with Marsh & McLennan Inc. for the Tyee Lake wrap-up. In the first place, if a consultant believes he will be awarded the contract for any services he recommends, then he is more likely to recommend that those services are necessary. Secondly, it is State policy to utilize competitive selection procedures, and no attempt was made to do so in this case.

It is our belief that APA and Risk Management tried to objectively evaluate the wrap-up option, and decided that it was in the best economic interests of the State. The fact that the time frame for Tyee Lake was too short to go through a broker selection process was not considered a major problem. This had just been done for the State's other coverages, and it was reasoned that that selection process would satisfy similar requirements for Tyee Lake. Therefore, it was decided to utilize the State's current brokers.

While we do not question APA or Risk Management's motives behind this decision, we do think they acted in haste. If there was insufficient time to go through a broker selection for Tyee Lake or to look into the legal questions raised later in this report, then it would perhaps have been better to utilize contractor provided insurance on Tyee Lake and reconsider wrap-up for future projects instead.

Expectations of future APA wrap-up contracts: Marsh & McLennan Inc. correspondence indicates that the firm was vying for and in fact expected to provide brokerage services on future APA wrap-up programs. In addition, the contract between APA and the brokers was worded in such a way that future projects could simply be appended to it. However, the contract as signed December 22, 1981, is clearly limited to Tyee Lake - Phase I (with the implicit understanding that Phases II and III would be added), and APA and Risk Management memos demonstrate that the insurance alternatives for other APA construction projects would be decided on a case-by-case basis. This intention is also evidenced by testimony of APA staff at the October 2, 1981, APA Board meeting.

We cannot verify whether APA and Risk Management would in fact have gone through a broker selection process on future projects, since the APA Board opted that contractor provided insurance be used on the only other construction project to date, Terror Lake. Certainly no procedures for broker selection were begun prior to the Board's April 15, 1982, Terror Lake decision, though this may be attributable to the controversy and questionable future of State agency wrap-ups at that point in time.

Expansion to cover completed or acquired projects: The issue of whether or not to use owner provided insurance applies only to construction projects. Another issue is how best to insure completed or acquired projects, the immediate cases in point being Solomon Gulch and Swan Lake.

The Division of Risk Management has taken the stand that, as State owned property, completed projects such as Solomon Gulch automatically become a Risk Management responsibility. As is done for other State owned property, Risk Management would negotiate the cost and conditions of coverage and bill APA accordingly. Furthermore, it is Risk Management's responsibility to determine whether coverage in place on acquisitions such as Swan Lake adequately protects the State, and, if not, to cover exposures. In both of the above instances, the method for providing insurance has been to fold the projects into the State's master insurance programs which are brokered through Marsh & McLennan Inc. and Corroon & Black/Dawson & Co., Inc. The brokers have adopted the acronym "APOP" for these projects, which stands for Alaska Power Operations Program.

Vague allegations have been raised about the nature and extent of APOP, and that it is being thrust upon the entities from which projects are being acquired. We found no substance to these allegations, and to our knowledge APOP is no more than as described above. In addition, until or unless a separate risk management program is developed for APA, we concur with the Division of Risk Management's judgment on how to handle completed or acquired projects.

Awarding of insurance review contract: APA also contracted with Marsh & McLennan Inc. and Corroon & Black/Dawson & Co., Inc., to perform an insurance review of all APA contracts. This agreement, signed the same day as the APCOP - Tyee Lake contract, involved an evaluation of contract insurance language and evidences of insurance, establishment of on-going contract review procedures, and other related services. Contract consideration was to be for services rendered, not to exceed $40,000.

Results of this contract demonstrate that APA contracts generally did not have adequate insurance language and that APA's exposures were greater than intended. However, the fact that there was evidently a legitimate need for this contract does not justify its being awarded without competitive bids. Nor was there any particular time pressure, as there was with the APCOP - Tyee Lake contract, that would preclude normal competitive bid procedures.

C. Administration of APCOP - Tyee Lake Contract

Several questions have also been raised about the administration of the APCOP - Tyee Lake contract; that is, how the brokers and the Division of Risk Management are performing those services they were contracted with to provide. These questions are discussed below.

One question is whether the Workers' Compensation (WC) reserve established for State employees is commingled with or has in fact been used for Tyee Lake employees. The APCOP - Tyee Lake and State WC reserves are not commingled, and as of July 1, 1982, they will also be handled by different adjusters. Prior to the establishment of an APCOP reserve account, however, a Tyee Lake employee was injured and $9,417 was paid out of the State WC reserve to cover related claims. The State's reserve was subsequently reimbursed upon establishment of the APCOP WC reserve account in January 1982.

Another question has to do with whether the brokers and/or Risk Management have conducted business using "secret" bank accounts. We have found references to three bank accounts. The first was established with First Interstate Bank in Seattle, and was used by the brokers for paying all bills related to their APCOP account. This account was subsequently closed and replaced with an account with the National Bank of Alaska. A third account, also with the National Bank of Alaska, is a depository account used by Northern Adjusters for paying APCOP Workers' Compensation claims. All three of these accounts are utilized internally by the brokers or their sub-contractors to perform services necessary to fulfilling the APCOP contract. Risk Management neither deposits nor withdraws funds from these accounts. Therefore, these accounts are not subject to the requirement that as State accounts they be reported to the Department of Revenue.

Questions have also been raised about the propriety of payments from the APCOP bank accounts, particularly for such things as lunches, dinners, or drinks. We think these questions are moot. Marsh & McLennan Inc. and Corroon & Black/Dawson & Co., Inc., are being paid a fixed sum, a portion of which is attributable to brokerage fees. In general, it is not within our control to dictate to the brokers and their respective managements how those fees may be used.

Another issue is whether State competitive bid procedures have been bypassed by contracting with brokers who then in turn sub-contract with other firms to perform certain services. Particular questions have been raised about the sub-contracts for claims adjusting. We think

that while State procedures may be bypassed, there is very little incentive on the brokers' part for not employing competitive procedures of their own. As noted before, the brokers are being paid a fixed sum to perform certain services. It is certainly not in their best interests to over-pay sub-contractors. As far as the claims adjusting sub-contract is concerned, State competitive procedures were not bypassed. The contract RFP and award process was administered through the Division of Risk Management along with the claims adjustment contracts for other State accounts, and met standards for objective and competitive review.

Two final questions, which underlie all the above, are what APA is buying in its APCOP - Tyee Lake contract, and whether it is less expensive than contractor provided insurance would have been. A budget for all phases of the Tyee Lake wrap-up program is being prepared but has not been finalized. Once the budget is established, the Division of Risk Management has informed us that in its capacity as risk management consultant for APA, it will arrange for audits of APCOP expenses and actuarial reviews of loss reserves.

It is also too early to determine if wrap-up for Tyee Lake will be cost effective. Tyee Lake - Phase I was bid with insurance, with $1,798,867 subsequently backed out. The APCOP Phase I insurance contract cost, after premium discount, $1,690,000. Therefore, there is an immediate apparent cost savings of $198,867. Since the other Tyee Lake contracts were bid net of insurance, no easy "upfront" numbers are available, and it is beyond the scope of this report to project them. A schedule of claims as of May 31, 1982, is presented in Appendix B, but the total insurance costs of Tyee Lake will not be known for several years.

D. Legal Issues

In addition to the legal issues implied in the matters already discussed, several specific legal questions have been raised. These include:

- Is the State insured on Tyee Lake and has it been from the start?
- Do wrap-ups by State agencies violate existing law?
- Is the State self-insuring Workers' Compensation for Tyee Lake, and if so, is this in compliance with law?

Each question is discussed below.

Is the State insured on Tyee Lake and has it been from the start? The basis for this question is two-fold. First, while work on the Tyee Lake project began in November 1981, the insurance contract between APA and the broker was not signed until December 22, 1981. Second, while APA was provided with "subscription policies" by the brokers in October 1981, these policies were not agreed to by underwriters until, in some cases, months later.

From our review of legal opinions and documents, it appears that the State is and has been covered on Tyee Lake, if for no other reason than that it has clear recourse against the brokers themselves. This is established through letters of intent and brokerage warranties in which the brokers certify that they have placed insurance as specified in the "subscription policies." Marsh & McLennan Inc. and Corroon & Black/ Dawson & Co., Inc., it should be noted, have assets valued far in excess of dollars being insured under the APCOP - Tyee Lake contract. In addition, the State's master insurance contract is broadly worded and would include Tyee Lake exposures.

Do wrap-ups by State agencies violate existing law? We have reviewed several legal opinions and discussed this question with representatives of the Attorney General's Office. To our knowledge there is no Alaska law or body of laws that generally prohibit wrap-up insurance programs by private or public entities.

Is the State self-insuring Workers' Compensation for Tyee Lake, and if so, is this in compliance with law? This is the primary legal question on the owner provided insurance program that is in place for Tyee Lake, and to date it is unresolved. Through our discussions with the two agencies who have jurisdiction over Workers' Compensation - the Division of Workers' Compensation and the Division of Insurance - we have identified the key issues to be:

1. All employers must provide Workers' Compensation coverage for their employees. This may be done one of two ways: The employer may purchase a WC policy through an insurer approved by the Division of Insurance, or may be granted a self-insurance certificate by the Workers' Compensation Board.

2. The WC coverage for Tyee Lake contractors and their employees is provided under a policy by an approved insurer, but is, in the end, self-insured by the State. This is illustrated as follows:

   - APA contracts with brokers for APCOP services.
   - Brokers contract with Pacific Marine Insurance Co., an approved Alaska insurer.
   - Pacific Marine issues policy, makes necessary filings with Division of Insurance, WC Board.
   - Pacific Marine, in effect, reinsures total liability back through APCOP brokers.
   - Brokers establish loss reserve fund from which Tyee Lake WC claims, up to $300,000 per occurrence, are paid (insurance purchased for excess coverage); amount of fund comes out of lump sums paid by APA to brokers. The final amount to be set aside for WC reserves is still being negotiated.
   - Brokers receive assurance from Division of Risk Management that if actual losses exceed loss reserves, "the State loss reserve fund would be made available to pay losses after exhaustion of the APCOP loss reserves."

3. The question now becomes, by what authority can the State self-insure Tyee Lake employees? The State of Alaska has been granted a self-insurance certificate and self-insures Workers' Compensation for State employees. According to the Workers' Compensation Board, however, this certificate does not allow the State to insure non-State employees, such as the contractors and their employees on Tyee Lake.

4. A related question is whether the State is, in effect, acting as an insurance company.

5. Finally, a significant question exists as to where the funds would come from if the WC loss reserves established for Tyee Lake claims prove to be inadequate. This question has not been adequately considered, let alone answered.

   One scenario is that these excess losses would be covered under the State's aggregate of excess coverage. Under this insurance, virtually all State losses above a given aggregate are covered. For the year ended May 15, 1981, the aggregate base was $7,500,000; for the current period, the base is reduced to $7,000,000. Actuarial estimates indicate that State losses will exceed the aggregate for the year just ended, and the trend of losses has been to increase each year.

A second scenario is that State losses will not exceed the aggregate, and therefore the excess losses on Tyee Lake will have to be absorbed elsewhere. It is unclear how this would be done.

A third scenario is that losses on Tyee Lake will be less than the reserves. In this event, funds would be returned to APA.

CONCLUSIONS AND RECOMMENDATIONS

In general, we found the allegations that APA, Risk Management, or brokers/agents acted improperly to be unsubstantiated. We do believe, however, that APA, relying heavily on the advice of Risk Management, acted hastily in its decision to employ owner provided insurance for Tyee Lake, even though delay would have precluded this option. By so doing, they did not adequately consider the legal ramifications or impact of wrap-up as viewed by other State insurance agencies, and entered into a major contract without utilizing competitive procedures. In any event, while time constraints may arguably support the Tyee Lake sole source contract, they do not justify the awarding of a separate $40,000 contract by APA to the brokers without competitive bid.

In conjunction with the Tyee Lake wrap-up program and in anticipation of this concept being applied to future APA projects, we make the following recommendations:

1. The Divisions of Risk Management, Insurance, and Workers' Compensation should discuss, in a formal setting if necessary, the Workers' Compensation and other insurance questions that have been raised. Using a State-funded loss reserve for non-State employees is clearly a divisive and unresolved issue. It is incumbent on these agencies to clarify what is a very gray area.

2. APA and Risk Management should monitor and evaluate the Tyee Lake wrap-up program in order that some comparative data be available for future projects. This would entail audits and actuarial reviews of payments and loss reserves, as well as an independent evaluation of owner vs. contractor provided insurance.

3. APA should decide whether or not to utilize owner provided insurance far enough in advance to incorporate this into the contractor RFP. For example, contractors could submit bids with insurance, without insurance, or both with and without insurance and then be measured against some pre-determined criteria.

   In addition, sufficient time should be allowed to go through a broker selection process on construction projects where APA opts for owner provided insurance.

4. APA and Risk Management should clarify their respective responsibilities over APA projects, whether under construction or completed. In December 1981, the two agencies signed a memorandum of understanding outlining the role each played in providing risk management

services for APA. However, this "understanding" has become somewhat strained. For example, brokers have been given conflicting signals over certain coverages, and APA is even considering employing its own risk manager.

We would hope that APA's decision will be based on economics and need, and will consider all those issues inherent in wrap-up regardless of who administers it. In any event, until and unless APA establishes its own risk management program, the existing memorandum of understanding should be followed to ensure comprehensive and continuous coverage on APA projects.

APPENDIX A

SCHEDULE OF APA CONTRACTS WITH
AND PAYMENTS TO BROKERS
As of June 15, 1982

Contract Encumbrance Number	Description	Contract Amount	Payments at 06/15/82
CC082307	Alaska Power Construction Program (APCOP) - Tyee Lake, Phase I[1]	$1,790,000	$540,000[2]
CC082304	APA Contract Insurance Review	$ 40,000	$ 20,000

1 To date, no provisions for Tyee Lake - Phases II-III have been appended to the APCOP contract. These phases were bid net of insurance, but how and through whom APA will provide insurance has not been finalized.

2 Scheduled payments are:

10/01/81	$ 640,000	
Less Premium Discount	(100,000)	
		$ 540,000
08/01/82		580,000
02/01/83		570,000
		$1,690,000

APPENDIX B

TYEE LAKE LOSSES AND PAYMENTS
As of May 31, 1982

Loss Type	Estimated Loss Incurred	Loss Payments
Workers' Compensation[1]	$111,846	$33,108
Property	20,000	-0-
	$131,846	$33,108

1 As of May 31, 1982, 14 Workers' Compensation claims had been submitted for adjustment. Largest estimated loss for a single claim was $25,000.

JAY S. HAMMOND, GOVERNOR

DEPARTMENT OF ADMINISTRATION

OFFICE OF THE COMMISSIONER

POUCH C
JUNEAU, ALASKA 99811

August 2, 1982

Mr. Gerald Wilkerson, CPA
Legislative Auditor
Division of Legislative Audit
Legislative Budget and Audit Committee
Pouch W
Juneau, AK 99811

Re: Response to a Special Review of the Alaska Power Authority Insurance Programs Administered Through the Alaska Power Authority and the Department of Administration, Division of Risk Management, Dated June 29, 1982

The decision to recommend the Wrap-up program to the Alaska Power Authority (APA) was completely the responsibility of the Division of Risk Management. Wrap-up insurance has been the normal way to cover large construction projects for the last 30 years. This is not to imply that wrap-ups are not controversial because they are. This controversy, however, does not deter from the cost effective nature of wrap-ups. There are three valid reasons for not considering wrap-up insurance:

1. The construction project is not large enough (50 million or greater);

2. The Risk Management Program of the owner or contractor is not sophisticated enough to adequately coordinate the required services.

3. The political considerations which have resulted in several states passing restrictive legislation prohibiting wrap-ups.

Prior to recommending wrap-up to the APA, meetings were held between Risk Management and the Division of Insurance. Even though wrap-ups are acceptable in Alaska, the Division of Insurance is responsible for setting up guidelines and if required, adopting regulations. After reviewing the guidelines and discussing Risk Management's program, the Division of Insurance decided to not adopt regulations. Most of the questions regarding wrap-ups had been answered

several years ago when Alyeska Pipeline Co. was given approval to provide an owner wrap-up for the Taps Construction.

Before answering the individual recommendations, we would like to make two observations: First, the atmosphere surrounding the initiation of this audit was inflammatory in that there were a considerable number of rancorous accusations made against the Division of Risk Management, APA and the APCOP brokers. We believe that the auditors were able to cut through the periphery issues and produce a professional report which is notable for its objectivity.

Second, many of the legal issues on closer examination did not have substance. In order to completely counteract the questions, we had legal research done on several of these legal questions and they were not found to be meritorious.

The conclusion that there were no improprieties are concurred with. The decision to use the State's recently appointed brokers for the first wrap-up program is justified from a Risk Management standpoint and the brokers who participated in the RFP understood it to be for Risk Management services over a three to five year period.

The $40,000 contract review program has received more publicity than it warrants. This contract review had two facets: 1. To determine what existing liabilities were outstanding, and to provide coverage if needed. Since the State's brokers were responsible for providing the coverage ex commission, there was no logical way to select another contractor. Also, there was a sense of urgency due to the pending acquisition of the Solomon Gulch and Swan Lake projects and the need to become immediately involved in the contract negotiations between the APA and the project attorneys.

Recommendations

1. The Divisions of Risk Management, Insurance, and Workers' Compensation should discuss, in a formal setting if necessary, the Workers' Compensation and other insurance questions that have been raised. Using a State-funded loss reserve for non-State employees is clearly a divisive and unresolved issue. It is incumbent on these agencies to clarify what is a very gray area.

   Agreed. Attached is a memo (Appendix I) which has been sent to both the Division of Insurance and the Workers' Compensation Board which should resolve the problem. If not, we are prepared to meet with appropriate personnel to answer any questions.

2. APA and Risk Management should monitor and evaluate the Tyee Lake wrap-up program in order that some comparative data be available for future

projects. This would entail audits and actuarial reviews of payments and loss reserves, as well as an independent evaluation of owner vs. contractor provided insurance.

Agreed. This recommendation is an excellent one and one in which Risk Management is quite interested in pursuing. We believe that the Tyee Program will prove to be extremely cost effective and will also have a considerably better safety record than similar projects of this type. In addition, we believe that we are using a maximum of Alaska Risk Management contractors on the Program and that we are making it available for the smaller Alaska contractor to participate by furnishing raw coverage insurance that the smaller contractor might not be able to purchase on its own. See Appendix II and III for allocation of costs.

3. APA should decide whether or not to utilize owner provided insurance far enough in advance to incorporate this into the contractor RFP. For example, contractors could submit bids with insurance, without insurance, or both with and without insurance and then be measured against some pre-determined criteria.

   In addition, sufficient time should be allowed to go through a broker selection process on construction projects where APA opts for owner provided insurance.

   Agreed. Risk Management was limited by the decision process that the APA and its board of directors were operating under. There is no question but that the insurance language should be incorporated prior to the bids being put out. In addition, we would recommend that all insurance specifications include the owner wrap-up language and that after the bid is let that the contractor's firm be given the option of proposing its price to write the coverage. In this way a direct comparison of advantages of owner or contractor wrap-up could be made and a decision made at that time.

4. APA and Risk Management should clarify their respective responsibilities over APA projects, whether under construction or completed. In December, 1981, the two agencies signed a memorandum of understanding outlining the role each played in providing risk management services for APA. However, this "understanding" has become somewhat strained. For example, brokers have been given conflicting signals over certain coverages, and APA is even considering employing its own risk manager.

   We would hope that APA's decision will be based on economics and need, and will consider all those issues inherent to wrap-up regardless of who

administers it. In any event, until and unless APA establishes its own risk management program, the existing memorandum of understanding should be followed to ensure comprehensive and continuous coverage on APA projects.

Agreed. There have been meetings with the APA and Risk Management since the pressure of the legislative activity has been reduced. The result of the last meeting was that Risk Management would take over the administration of the contract between the APA and the APCOP brokers. In this way the APA would not be responsible for understanding and administering a Risk Management Program but instead, will pass this responsibility to Risk Management pending any decision to set up their own program. In this regard there is presently a Request for Proposal (RFP) for a Risk Management consultant to study the whole wrap-up insurance question for the APA.

Although it is difficult to quantify the exact savings to the State, a Federal government study has verified savings of 30-40 percent of conventional insurance costs. This relates to two percent of construction costs. In addition, since the State holds on to the loss reserves, an additional one per cent of costs is realized through investment earnings. If the present construction schedule of the APA is realized, the savings would amount to $192,600,000.

It is important that the controversy surrounding this program not obscure the potential savings to the State, which would be lost if the program were terminated.

Sincerely,

Carole J. Burger
Commissioner

CB/JH/jbh
3/0802-02/RM2

APPENDIX I

MEMORANDUM State of Alaska

TO: Ms. Jackie McClintock
Director
Division of Workers' Compensation
Department of Labor

DATE: August 2, 1982

FILE NO:

TELEPHONE NO: 465-2180

FROM: John Haywood
Director
Division of Risk Management
Department of Administration

SUBJECT: Tyee Lake Wrap-up
Program Insurance

There have been several questions raised as to the details of the Workers' Compensation Insurance for the Tyee Lake Wrap-up Program. There are many ways in which large accounts structure their workers' compensation programs and some are more controversial than others.

Due to the unusual level of interest in this program, it was Risk Management's decision with the concurrence of Marsh and McLennan and Pacific Marine Insurance Company to provide one of the conventional forms of coverage.

Consequently, we have negotiated a Retrospective Rating Plan "D" combined Workers' Compensation and General Liability. This is an incurred loss retro program which puts it in the mainstream of insurance programs.

JH/je
5/0802-06/FM1

APPENDIX II
TYEE PREMIUM ALLOCATION

TOTALS	I - Tunnel & Powerhouse	=	$1,690,000
	II - Submarine Cable	=	598,000
	III - Transmission Line	=	1,496,602
	TOTAL		$3,784,602

PHASE I - Powerhouse & Tunnel Contract - $1,690,000 - Total Premium

1.	General Liability & Workers' Compensation - 2 yrs	=	974,000
2.	Inland & Marine Cargo	=	303,000
3.	Non-owned Aviation	=	61,000
4.	C.O.C. - Builders Risk	=	181,000
5.	Excess Insurance	=	171,000
			$1,690,000

PHASE II - Submarine Cable Contract - $598,000 - Total Premium

1.	General Liability & Workers' Compensation	=	179,400
2.	Non-owned Aviations	=	32,500
3.	C.O.C. - Builders Risk	=	29,900
4.	Excess Insurance	=	63,980
5.	Marine Insurance	=	292,220
			$ 598,000

PHASE III - Transmission Line Contract - $1,496,602 - Total Premium

1.	General Liability & Workers' Compensation	=	1,174,327
2.	C.O.C. - Builders Risk	=	162,100
3.	Excess Insurance	=	160,130
			$1,496,602

APPENDIX III
TYEE WRAP-UP BUDGET
August 22, 1982

PHASE	I	-	1,690,000
	II	-	598,000
	III	-	1,496,602
TOTAL		-	3,784,602

PREMIUM	1,242,000
RETENTION	1,894,000
ADMIN. EXP.	82,000
BROKER FEE	119,000
EXTRAORDINARY TRAVEL/LEGAL	40,000
SAFETY	78,000
CLAIMS ADJ	60,000
ATTORNEYS	15,000
CONTINGENCY	207,602
PRESS RELEASE	5,000
INSURANCE LIASON	20,000
CPA/ACTUARIAL	10,000
CLAIMS MANAGEMENT	12,000
TOTAL	3,784,602

3/0802-02/RM2

ALASKA POWER AUTHORITY

334 WEST 5th AVENUE - ANCHORAGE, ALASKA 99501

Phone: (907) 277-7641
(907) 276-0001

August [illegible]

Mr. Gerald Wilkerson, CPA
Budget and Audit Committee
Legislative Auditor
Division of Legislative Audit
Pouch W
State Office Building
Juneau, Alaska 99811

Subject: Response to Preliminary Audit Report
Alaska Power Authority Insurance Programs

Dear Mr. Wilkerson:

Attached is our response to the Preliminary Audit of June 29, 1982. Mr. Conway requested that I respond to you directly. The Alaska Power Authority has expressed its agreement with each of the Audit Report Recommendations and has initiated action to implement the recommendations.

The Power Authority is currently selecting an Insurance Consultant to provide professional services on insurance matters. This action will increase our expertise and management of insurance related issues and thereby mitigate the administrative concerns addressed in the Legislative audit.

Sincerely,

Eric P. Yould
Executive Director

Attachment: as stated

ALASKA POWER AUTHORITY

RECOMMENDATION ONE:

1. The Divisions of Risk Management, Insurance, and Workers' Compensation should discuss, in a formal setting if necessary, the Workers' Compensation and other insurance questions that have been raised. Using a State-funded loss reserve for non-State employees is clearly a divisive and unresolved issue. It is incumbent on these agencies what is a very gray area.

POWER AUTHORITY RESPONSE:

This recommendation is not addressed to the Alaska Power Authority.

RECOMMENDATION TWO:

2. Power Authority and Risk Management should monitor and evaluate the Tyee Lake wrap-up program in order that some comparative data be available for future projects. This would entail audits and acturial reviews of payments and loss reserves, as well as an indepenuent evaluation of owner vs. contractor pro ded insurance.

POWER AUTHORITY RESPONSE:

The first part of this recommendation addresses the monitoring and evaluation of the Tyee Lake wrap-up program and refers to an audit program. The Power Authority agrees that this is a necessary and beneficial action since the Tyee wrap-up program is the Power Authority's first owner's provided insurance program.

In order to implement this recommendation, the Power Authority has issued an RFP for an Insurance Consultant. An evaluation of the Tyee wrap-up will be a primary task of the Consultant.

The Insurance Consultant will, if appropriate, define an audit scope and follow through with an audit program.

Secondly, the Power Authority Insurance Consultant will conduct an independent evaluation of owner vs. contractor provided insurance.

RECOMMENDATION THREE:

3. Power Authority should decide whether or not to utilize owner provided insurance far enough in advance to incorporate this into the contractor RFP. For example,

contractors could submit bids with insurance, without insurance, or both with and without insurance and then be measured against some pre-determined criteria.

In addition, sufficient time should be allowed to go through a broker selection process on construction projects where Power Authority opts for owner provided insurance.

POWER AUTHORITY RESPONSE:

Power Authority agrees that should the review of the Insurance Consultant indicate that owner-provided insurance is cost effective and in the best interest of the Power Authority and provided that the Power Authority staff concur with the Consultant's opinion, any owner-provided insurance programs will be incorporated in the contract issuance process.

Power Authority will take steps to insure that sufficient time is allowed to properly select a qualified broker.

RECOMMENDATION FOUR:

4. Power Authority and Risk Management should clarify their respective responsibilities over Power Authority projects, whether under construction or completed. In December, 1981, the two agencies signed a memorandum of understanding outlining the role each played in providing risk management services for Power Authority. However, this "understanding" has become somewhat strained. For example, brokers have been given conflicting signals over certain coverages, and Power Authority is even considering employing its own risk manager.

   We would hope that Power Authority's decision will be based on economics and need, and will consider all those issues inherent to wrap-up regardless of who administers it. In any event, until and unless Power Authority establishes its own risk management program, the existing memorandum of understanding should be followed to ensure comprehensive and continuous coverage on Power Authority projects.

POWER AUTHORITY RESPONSE:

The Power Authority agrees with this recommendation and as such the Power Authority and the Division of Risk Management have mutually agreed that the day-to-day administration and monitoring of Tyee "wrap-up" insurance program should be the responsibility of Risk Management. The Power Authority Tyee insurance contracts are in the process of being assumed by Risk Management. The Power Authority believes that the existing memorandum of understanding has been clarified for both parties.

The Power Authority will approve insurance premium payments prior to Risk Management making payment. Payment will be made on the basis of insurance premium invoiced cost and in accordance with the terms specified by the Power Authority's transmitted RSA.

The existing memorandum of understanding applies only to the Tyee "wrap-up" insurance program. The Power Authority will rely on the advise of its Insurance Consultant in evaluating future project insurance requirements.

ALASKA STATE LEGISLATURE
HOUSE OF REPRESENTATIVES
RESEARCH AGENCY

Pouch Y, State Capitol
Juneau, Alaska 99811
(907) 465-3991

February 11, 1983

MEMORANDUM

TO: Representative Don Clocksin

FROM: Jack Kreinheder
Research Staff

RE: Lake Tyee Power Costs and Project History
Research Request 83-39

You requested that we summarize the current status of contract negotiations the sale of power from the Lake Tyee hydro project. You asked that we address the expected cost of power from the project, current power costs in Petersburg and Wrangell, and alternatives for reducing Tyee power costs to marketable levels.

The attached letter from the Alaska Power Authority outlines the sequence of construction cost estimates for the Tyee project and the decisions made by the Power Authority Board concerning project construction.

It is important to emphasize that the power cost projections in this memorandum are preliminary and are currently being revised by the Power Authority to reflect detailed financing arrangements for the Tyee project. These revised cost estimates will probably be somewhat lower than the figures cited here.

SUMMARY OF FINDINGS

The basic power marketing problem for the Tyee project is that the wholesale cost of power from the project in its first years of operation is projected to be about 40 percent higher than current power generation costs for Petersburg and Wrangell. The Power Authority estimates that Tyee power will cost about 16.5 cents per kilowatt hour (KWH) in FY 1986. Recent press reports have cited claims by Petersburg officials that the retail cost of power from Tyee would be 100 percent higher than current levels. However, these claims are disputed by the Power Authority, as discussed later.

Power generation in Petersburg and Wrangell now costs about 12 cents per KWH and this cost is not likely to increase substantially over the next several years unless oil prices increase more than expected by most forecasters. These communities are understandably not willing

to sign contracts to purchase Tyee power at rates substantially higher than current generation costs.

If no action is taken by the legislature to reduce Tyee rates, it appears that power sales agreements could not be obtained and the Power Authority would not be able to sell the necessary revenue bonds to repay the interim financing for the project. Although I did not research the possible steps the Power Authority might take in this situation to avoid a default on the Tyee debt, the Authority would probably be in a precarious financial position.

There are several possible approaches to reducing power rates for the Tyee project, most of which require more State money:

(1) Make an additional lump sum appropriation to the hydro program to reduce the amount of debt financing required for Tyee and other projects. About $70-80 million may be required to reduce Tyee rates to the level of current power costs. If desired, this appropriation could be structured as a loan, to be repaid to the State after Tyee power becomes competitive with the cost of power from present generation facilities.

(2) Appropriate a smaller amount of about $20 million only to the Tyee project and enact temporary legislation which would reduce only the Tyee rates. (Under present law, an appropriation to any power project would reduce the power rates by an equal percentage for all projects.)

(3) Make annual appropriations of about $2-3 million to cover a portion of the debt service costs for the Tyee project, allowing power rates to be reduced until the project becomes competitive with diesel generation costs.

(4) Amend the rate structure under present law to spread the higher cost of Tyee power among other power projects.

(5) Restructure the long-term debt for the Tyee project to reduce debt service costs in the early years of project operation (the viability of this approach is uncertain).