

DRAFT
REJ:CB
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PLAINTIFF'S
EXHIBIT

14449.00

PROPOSAL FOR PERIODIC HEALTH EXAMINATION PROGRAM

I. THE PAST

Shell's present Periodic Examination Program appears to be characterized by:

1. Numerous periodic appraisals over a number of years by various groups which have almost universally recommended that the program be improved or junked.
2. An apparent lack of definite response by Management to the recommendations of the appraisal groups.
3. Poor employee acceptance and participation in the program.
4. Concepts and procedures which prohibit Management from realizing an optimal return on its investment.

II. THE PRESENT

The advent of OSHA makes it clear that the Company must develop an examination program of some type, regardless of its philosophical viewpoint. It is anticipated that by the end of the 1972, National Institute of Occupational Safety and Health will have issued criteria documents on asbestos, noise, heat, ultra violet radiation, tetraethyl and tetramethyl lead, silica, mercury and arsenic. In 1973, additional documents are scheduled covering toluene and benzene, cotton dust, sulfur dioxide and sulfuric acid, TDI and trichloroethylene. Other documents in preparation, but without specifically assigned completion dates,

ABS-016617

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include fiberglass, parathion, cadmium and chromic acid. It is impossible to predict with accuracy the extent of medical examination requirements that will be contained in these documents or in the OSHA Standards which they generate. If the documents already issued, however, (asbestos, noise, beryllium, heat stress) are any indication, large-scale examination programs may be required.

The facts leave us no real alternative. We will be involved in an examination program whether we wish to be or not. The only question remaining to be resolved is the scope of that program.

The required examination programs will necessitate expenditures for physicians' services far beyond past investment. The second question to be resolved, then, is whether this investment will be made in outside medical facilities, or whether we develop it within the Company. From a purely economic standpoint, the answer to this question will depend upon the number of examinations required by law.

There are a number of benefits to be derived from a Periodic Health Examination Program applicable to all employees. Among these are: reduction of absenteeism, improvement in general employee health and performance, improvement in Workmen's Compensation experience, and betterment of employee morale. A

fifth factor, however, looms even more important in the light of increased Federal regulation of the work environment. This factor is the generation of statistical health data on employee populations exposed to real and theoretical hazards. As valuable as animal studies are in the current procedure of setting threshold limit values, they are not nearly as important as the effective demonstration that human populations exposed to given levels of materials fail to demonstrate detrimental changes. Such studies require large employee populations, both in exposed and control groups to have real significance. For these reasons alone, it would appear wise to seriously consider the institution of a Periodic Health Examination Program applicable to all employees.

The program which I recommend would be of the Multi-phasic Health Screening type, and would utilize computerization of test results, so that data would be easily retrievable for retrospective correlation studies. Frequency of the examination would depend upon age group, general health status, and potential of exposure.

III. THE FUTURE: HOUSTON AREA

Within the next two years, the Shell employee population based in the Houston area will approach 10,000. This high degree of centralization, coupled with the availability of excellent medical services, creates a highly suitable experimental group for the development of an examination program. A number of alternatives may be considered.

PROPOSAL FOR PERIODIC HEALTH EXAMINATION PROGRAM

A. Alternative 1

An examination program applicable to all employees in the Houston area would require approximately 3600 examinations per year. Frequency of examination would be based upon age and potential risk considerations. Approximately 1200 of these examinations would be performed annually at a consolidated Houston Refinery-Chemical Plant medical installation. The remaining 2400 examinations would be performed on employees of Head Office, Bellaire Laboratories, Research Center and Information Center at one or more locations to be determined. If obtained through community medical channels, the approximate cost of these examinations would be \$270,000 annually. Clearly, then, we should consider performing the examinations ourselves in Company facilities. An in-house program of this nature would require the acquisition of additional physicians, nurses and equipment. Additional personnel requirements for an in-house program, along with estimated costs per year are given in Appendix I.

B. Alternative 2

An obvious alternative to the above plan would be to include in the examination program only those employees having some determinable risk of occupational exposure. Such a program would be limited to production workers at the Houston Refinery-Chemical Complex, and to selected laboratory personnel. The advantages of this alternative

are obvious from an economic standpoint, but are nullified in part by the loss of statistical data that would otherwise be generated on non-exposed personnel. Estimated costs for this alternative are also given in Appendix I.

C. Alternative 3

A third alternative is to limit the examination program to those employees whose examination is required by Federal or State regulation. The disadvantage cited in Alternative 2 above is equally applicable here. Additionally, the Company would surrender without question all the previously cited ancillary benefits of a comprehensive medical examination program. Since Federal and State requirements are not yet clearly defined, realistic cost estimates for this skeleton program cannot be developed.

IV. THE FUTURE: OTHER SHELL LOCATIONS

The initiation of a Periodic Health Examination Program at other Shell locations should be deferred pending the collection and evaluation of data gathered during the first year of operation of the Houston program. An exception to this recommendation is, of course, inherent in examinations required by Federal and State regulation.

V. COST OFFSETS

The costs detailed above do not represent net expense to Shell, since several offsetting factors come into play.

The first and most important of these factors is the intangible benefits associated with the acquisition of a full-time on-site physician at the Houston Refinery-Chemical Complex. Only about one-half of the physician's time would be devoted to the Periodic Health Examination Program. The remainder of his time would be utilized in the treatment of occupational injury, health education and counseling, absence control, alcoholism and drug addiction, training, research and administration. Assigning a value to these activities at this stage of discussion is unrealistic, and no attempt will be made to do so.

Other factors, however, can be calculated into economic terms with reasonable accuracy. Examples which are readily identifiable are:

- A. The on-site physician should be capable of performing all preemployment, periodic and special hazard examinations at the Medical Department. These examinations have previously

been obtained through community medical sources and, based upon the recently completed Survey of Medical Services, if performed on-site would affect a saving of approximately \$24,000.

- B. Based on the assumption that two-thirds of outside medical treatment fees would also be eliminated by the use of an on-site physician, an additional savings of \$14,000 would accrue.
- C. If the recommended examination program is initiated, an additional \$7,000 per year would be saved through the elimination of a large portion of outside x-ray services. This savings represents only that part of x-ray service used in the Periodic Examination Program. In actual practice, the availability of on-site x-ray service in trauma cases should considerably increase this savings.

The estimates shown above indicate that an on-site physician would offset almost one-third of the cost of Alternative 1, and two-thirds of the cost of Alternative 2. Details of calculations upon which these conclusions are drawn are available upon request.

When considered in terms of percent of payroll, ^{the costs of} the proposed program are very small indeed. The potential return could be very great.

APPENDIX I

COST ESTIMATES, HOUSTON AREA EXAMINATION PROGRAM

Alternative 1 below assumes consolidation of medical services at the Houston Refinery-Chemical Complex, and availability of the examination program to all employees regardless of job classification.

Alternative 2 below assumes similar consolidation of medical services at the Houston Refinery-Chemical Complex, but limitation of examination to groups of employees with determinable risk of occupational exposure.

Calculation of costs for Alternative 3, previously mentioned, is not feasible at this time.

TABLE I

<u>ITEM</u>	<u>Est. Annual Cost</u>	<u>Est. Annual Cost</u>
	<u>Alternative 1</u>	<u>Alternative 2</u>
1. One full-time physician at Houston Refinery-Chemical Complex	\$ 30,000	\$ 30,000
2. One full-time physician to serve Head Office, Bellaire Labs, Research Center and Information Center	30,000	----
3. One additional nurse to be stationed at Research Center *	10,000	10,000
4. One additional nurse to be stationed at Information Center	10,000	----

* This additional staffing will be required even if an examination program is not instituted; therefore, it does not truly reflect costs attributable to examination program.

TABLE I (Cont'd)

ITEM	Est. Annual Cost	Est. Annual Cost
	Alternative 1	Alternative 2
5. Annual supply budget for examination program	\$ 12,000 (3600 exams)	\$ 4,000 (1200 exams)
6. Additional equipment purchases necessary for institution of program (non-recurring costs)	6,000	3,000
7. Chest x-rays (if obtained through outside medical facilities @ \$15. ea.)	54,000	18,000
TOTAL	\$152,000	\$ 65,000
COST PER EXAM	\$42.22	\$54.16

Alternatives applicable to Item 7, Table I are worthy of consideration. The Item 7 cost figure assumes chest x-rays to be obtained through outside medical channels. Provision of in-house x-ray facilities, however, could favorably affect these costs. An initial investment of \$15-20,000 per x-ray installation would be required. Annual operating costs, however, should not exceed \$32,000 for one location, or \$42,000 for two locations. It is obvious, therefore, that the initial investment and annual operating costs would be offset by attendant savings within two to four years, depending upon the number of employees x-rayed annually. Consolidation of the Houston Refinery-Chemical Complex makes installation of on-site x-ray facilities even more attractive.

REJ
108



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