

price) and that the overall costs for the transporters would amount to about \$15.1 million. Are these estimates still valid?

Answer. The overall estimated cost of \$15.1 million for the transporters is still valid.

Project: Alteration and Rehabilitation of Launch Complex Nos. 34 and 37

Question. What is the age of the launch towers and associated equipment and were they specifically designed for the Saturn I and uprated Saturn I vehicles? If not, what shortcomings exist relative to adequate handling of currently planned launches?

Answer. The launch towers and associated equipment for Launch Complex 34 were completed in 1961. LC 37 was completed in 1963. Both stands were designed for the Saturn S-1 vehicle. Since then both complexes have been modified to provide an uprated Saturn I capability. Both complexes are capable of supporting the presently planned launches; however, certain structural and other repairs and modifications must be undertaken to retain this capability.

Question. Does the proposed repair and rehabilitation work conform to the experience of the Air Force both at Patrick and Vandenberg bases? Are the estimates for repair and rehabilitation in consonance with cost factors used by the Air Force on their older launch complexes?

Answer. The non-recurring maintenance costs experienced by the Air Force as well as NASA on similar structures were considered in the development of the cost estimate for the subject project.

Question. What has been the impact of the Apollo accident on repair requirements and what is the current estimate of the amount of damage caused?

Answer. The alterations and rehabilitation which are included in this project request did not stem from the Apollo accident. The latter is currently under investigation by a Board of Investigation. The estimated cost of modifications resulting from the accident will not be known until the Board has completed its work and filed its report.

Question. Specifically, what are the reasons that environmental control systems must be replaced and where are such systems now located?

Answer. The environmental control systems, which are located on the service structure and umbilical tower at both complexes, have been in continuous operation for over five years and have reached the point where major repairs and the replacement of some key elements is, or will be necessary. While normal maintenance has been provided, a program of major repair and rehabilitation has not been accomplished previously on these systems. Such a program wherein major elements such as compressors, valves, and controls are rebuilt or replaced, is normal for equipment of this type and must be accomplished at approximately five year intervals. An engineering investigation of the condition of the environmental control systems has established that major repairs will be necessary during FY 1968.

Question. Why is it necessary to replace or install structural members? Was this caused by inadequate design on the umbilical tower and the launch structure?

Answer. The replacement of structural members is not the result of inadequate design. The need to replace or install new members stems from the effects of past launches on the structures and the corrosion which has resulted from the salt laden atmosphere at Cape Kennedy. Some new members will be added to provide for additional loads imposed by platform mounted ground support equipment.

Question. If the obsolete drum type elevators need to be replaced, is it because they are inadequate or simply worn out? If inadequate, why did the original design provide for such slow elevators and is not such lack of speed a potential danger hazard in the event of an emergency at the capsule level of the tower? How many elevators are involved at each complex and on what time basis does NASA intend to replace such elevators?

Answer. The existing obsolete drum type elevators are at or nearing a point where they will be beyond economical repair. A phased replacement program is therefore necessary. The speed of these elevators was considered adequate for the support of unmanned launches. Higher speeds will be incorporated in the replacement items. These elevators will compliment the high speed elevators that provide the astronauts ingress and egress at the capsule level. There are three slow speed elevators on Launch Complex 34 and two on Launch Complex 37. One elevator will be replaced on each Complex during FY 1968. The remainder are scheduled for replacement starting in FY 1969.