

Approximately 1000 Certificates of Inspection (CI) were processed during the Lincoln Experimental Satellite program, representing mostly hardware lots accepted by QASL for the government, plus a small number of CI's on processes and testing operations. On this program, approximately 15 percent of the lots submitted to QASL for acceptance were rejected on the first submission. Additionally, about 6 percent of first lot submissions were "conditionally" accepted. Thus, about 21 percent of first lot submissions were of less than required quality.

Dollar value of hardware accepted by Sandia for the Lincoln Experimental Satellite mission is quite high. Total costs of the contract, including development effort for five flight RTG's, were about \$40 million (less radioisotopic fuel). Actual hardware costs are not readily extracted from this number, but replacement of a single flight RTG would probably cost in excess of \$1 million.

As a measure of effectiveness of the contractor quality program, QASL in mid-1975 started issuing a monthly Contractor Quality Assessment Report. In addition to the monthly quality rating (percentage of lots accepted on first submission), a Severity Index (gravity of reasons for rejected lots) and a Nonacceptable Incident Log Index (severity of operational type nonconformance as opposed to hardware nonconformance) are combined into a monthly plot of Performance Index (see Figure 2). Although this Performance Index is a new approach and is influenced by factors such as workload and type of operations underway, it does appear to be a viable technique to improve management visibility on status of the contractor's quality program.

IV. Sandia Resource Involvement

In the past decade the QASL SNAP QA effort has increased from an initial FY 67 budget of about \$50K (somewhat less than two man-years of Quality Engineering and SQAR support) to a budget of \$500K for FY 76 (or about 9 man-years of QA support).

Figure 3 shows the budget growth and man years for QA support. Expected budget for FY77 is \$500K, with about 8 man-years support.

As part of the QASL SNAP QA program, other disciplines within Sandia have been utilized and funded from the QA reimbursable budget. Examples of other Sandia expertise applied to the RTG program include:

Reliability: Contractor reliability program review and evaluations; assistance in formulating reliability plans and tests; design review support.

Operational Analyses: By QA, on MHW MJS program.