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SPACE STATION

Cost Control Difficulties Continue

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Mr. Chairman and Members of the Subcommittee:

I am pleased to be here today to discuss some of the risks involved in controlling the cost and maintaining the schedule of the National Aeronautics and Space Administration's (NASA) International Space Station program. The testimony today is principally based on our recent report on the program's continuing cost control difficulties.¹ The report is being released today by Representative John D. Dingell, who requested that we review the station's cost and performance reporting system when he was Chairman of the former House Committee on Energy and Commerce, Subcommittee on Oversight and Investigations. With your permission, Mr. Chairman, I would like to introduce the report into the record.

The report identifies a variety of issues that warrant continuing oversight because of their potential negative impact on the cost and schedule of the station program. While NASA has made progress in developing systems to control costs and track performance, significant threats to the station's cost and schedule remain. NASA also needs to continue implementing effective performance measurement systems. In the order discussed in our report, the specific issues requiring attention include (1) long-standing prime contract changes that need to be priced; (2) the worsening of the prime contract's cost and performance trends; (3) performance reports that contain unrealistic cost estimates at completion, which could be masking overruns; (4) the decreased level of Russian Space Agency participation and its implications for the future of the station; and (5) remaining problems in implementing performance measurement systems for accurately determining cost and schedule status.

In a worst case situation, these issues could threaten the future of the program, especially if they result in significantly higher cost estimates and substantial schedule delays. When considering the sensitivity of the station's budget profile to these risks, followup to ensure that promised corrective actions are taken in a timely manner and that recognized problems are effectively resolved, is of paramount importance.

As you know, the International Space Station is a major undertaking. NASA estimates the development and operations cost of the station at \$17.4 billion from October 1993 through completion of assembly in space,

¹Space Station: Cost Control Difficulties Continue (GAO/NSIAD-96-135, July 17, 1996).

which is currently scheduled for June 2002.² About \$6.3 billion of this estimate is intended to cover the activities of the prime contractor. Also, over \$5.5 billion is for a large number of smaller contracts to develop the ground-based and on-orbit capability to use and operate the station, about \$2.6 billion is for other contracts to develop on-orbit research facilities and conduct research, and more than \$3 billion is for financial reserves.³ In mid-1993, a \$2.1 billion annual funding limitation was imposed on the program.

The program started producing flight hardware in 1993 and the prime contract is about 45-percent complete. However, the program continues to face cost and schedule threats to its already limited financial reserves for completing the program within its \$17.4 billion total and \$2.1 billion annual budget. We do acknowledge that the program has been able to maintain sufficient reserves to fund additional costs that have occurred so far. We also note that station managers have identified cost savings and deferrals that bolstered the fiscal year 1996 reserves, and anticipate that there will be an unused balance to carryover and augment the expected fiscal year 1997 reserve level. However, despite these efforts, we are still concerned that identified contingencies could use up most of these funds, especially over the next several years. This situation would be exacerbated if additional continuing threats discussed in our report are realized. Program managers would then have to either exceed the annual funding limitation or defer or rephase other activities, thus possibly delaying the station's schedule and likely increasing its overall cost.

The first three risks discussed in our report that I mentioned earlier are the continuing threats to financial reserves. They include:

- a large number of unpriced contract changes,
- unfavorable cost and schedule trends, and
- potentially understated cost estimates.

Most of the contractor estimates of the value of authorized changes for which prices had not yet been negotiated are included in the current budget baseline. However, NASA did not budget for the full amount because

²Exclusive of \$30.8 billion for funding through fiscal year 1993 and station-related requirements to June 2002. The total of \$48.2 billion is detailed in Space Station: Estimated Total U.S. Funding Requirements (GAO/NSIAD-95-163, June 12, 1995).

³Anticipating and accurately estimating the development and operations costs of major research and development projects is highly unlikely. Accordingly, NASA's cost estimates for such projects include both a baseline program to fund the costs of known requirements and allowances for financial reserves to fund unexpected major contingencies, such as schedule delays or changes in project objectives or scope.

station personnel believe they can price these changes for less. NASA said it would complete the pricing by the end of this month. If NASA is unable to negotiate the lower prices it expects, financial reserves could be further reduced.

As of April 1996, the performance measurement system showed the station prime contractor about \$89 million over cost and about \$88 million behind schedule at the 45-percent completion point.⁴ Although these variances are currently within planned future funding levels, both showed deteriorating trends. It is our understanding these trends have continued to worsen.

The monthly cost performance reports included several instances where the contractor's total estimate of the cost to complete work did not recognize over-budget conditions even when the accompanying narrative included indications that the budget overrun could worsen. This omission of potential overruns concerns us, especially since NASA and the prime contractor identified the lack of realistic estimates of the cost to complete work as a problem during their initial assessments of the performance measurement systems. All the major subcontractors were expected to update their estimates of the cost to complete work by this summer.

An additional cost risk discussed in our report involves the continued participation by the Russian Space Agency. This cost risk does not threaten financial reserves in the same way as those threats I have previously mentioned. In a worst case situation resulting in a complete and sudden withdrawal from the station program by the Russians, a renegotiation of the total \$17.4 billion and annual \$2.1 billion development budget could be required. Only limited changes in the scope and timing of the Russian participation might be covered by the financial reserves. Despite recent statements of confidence regarding Russia's participation, we are aware of continuing concerns about its ability to deliver, and we believe this issue would benefit from continuing congressional oversight.

Two years ago, at a congressional hearing on cost reporting on Johnson Space Center contracts involving major parts of an earlier version of the current station, NASA promised to institute an improved performance measurement system on station contracts. This system would determine the extent that tasks are on schedule and within budget. Such systems are

⁴Cost variances represent the difference between actual costs to complete specific work steps and the amounts budgeted for that work. Schedule variances are the dollar value of the difference between the budgeted cost of work planned and work completed. Cost and schedule variances are not additive but schedule variances can become cost variances as additional work, that is, overtime, is often required to regain schedule.

intended to provide early warning of cost and schedule problems so corrective actions can be taken. At the time we completed our review, a complete performance measurement system was not yet in place. Nevertheless, NASA had made progress, especially toward ensuring that the station prime contractor and its major subcontractors had an adequate performance measurement system. We considered cost and schedule management as still being at risk, however, because all the deficiencies identified by NASA and the station prime contractor during their performance measurement system reviews were not yet corrected and the overall performance baseline for measuring cost and schedule progress was not yet completely established. In commenting on our report, NASA acknowledged that it faces many cost control challenges and that not all of the program's difficulties are behind it. However, NASA was confident that the program would continue to perform on schedule and within budget.

In summary, Mr. Chairman, there are numerous matters—both major and minor—which continue to threaten the station program's ability to stay within cost limits and on its current schedule. In some cases, commitments were made by NASA and its contractors to resolve or complete actions on the issues described in our report. It would be useful to the oversight of the station program to update those commitments and factor their results into a more current assessment of the program's cost and schedule status. Also, the possibility that the Russians might ultimately not be able to meet their commitments is a key threat to the program's cost and schedule and a most important one for congressional oversight.

Mr. Chairman, this concludes my statement. I would be happy to answer any questions you or the members of the Subcommittee may have.

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