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March 31, 1999

TO: AO/Chief Information Officer  
S/Associate Administrator for Space Science  
SJ/Director, NASA Management Office, JPL

FROM: W/Assistant Inspector General for Auditing

SUBJECT: Final Report on Audit of Year 2000 Program Compliance  
Requirements in NASA Information Technology-Related Contracts  
Assignment Number A9901500  
Report No. IG-99-022

The subject final report is provided for your use. Please refer to the Results in Brief section for the overall audit results. Our evaluation of your responses has been incorporated into the body of the report, and Appendix E addresses additional comments provided by the Chief Information Officer. Your comments on a draft of this report were responsive to our recommendations. Management's completed action is sufficient to disposition recommendation 1 and close it for reporting purposes. Please notify us when corrective actions have been completed on recommendation 2, including the extent of testing performed to ensure the corrective action is effective. This recommendation is undispositioned and will remain open until completion of corrective actions and until corrective actions are determined to be effective.

If you have questions concerning the report, please contact Mr. David L. Gandrud, Audit Program Director, Information Technology Program Audits, at (650) 604-2672, or Mr. Roger W. Flann, Program Manager, at (818) 354-9755. We appreciate the courtesies extended to the audit staff. The report distribution is in Appendix F.

**[Original signed by]**

Russell A. Rau

Enclosure

cc:  
B/Chief Financial Officer  
G/General Counsel  
H/Acting Associate Administrator of Procurement  
JM/Management Assessment Division

**IG-99-022**

**AUDIT  
REPORT**

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**YEAR 2000 PROGRAM COMPLIANCE REQUIREMENTS IN NASA INFORMATION  
TECHNOLOGY-RELATED CONTRACTS**

**March 31, 1999**

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National Aeronautics and  
Space Administration

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## **Acronyms**

IT	Information Technology
JPL	Jet Propulsion Laboratory
OMB	Office of Management and Budget
PIC	Procurement Information Circular
Y2K	Year 2000

# NASA Office of Inspector General

IG-99-022  
A9901500

March 31, 1999

## Year 2000 Program Compliance Requirements in NASA Information Technology-Related Contracts

### *Introduction*

The NASA Office of Inspector General is performing an audit of the Year 2000 (Y2K) Program at five NASA Centers<sup>1</sup> and the Jet Propulsion Laboratory (JPL). Our overall objective was to evaluate the adequacy of NASA's renovation and validation efforts including NASA's Y2K oversight of contractor activities and reporting to the Office of Management and Budget (OMB). This report relates to NASA information technology (IT) assets that NASA acquires and that contractors operate and maintain. Other aspects of the objectives either have been or will be addressed in another report. Details on our scope and methodology are in Appendix A.

### *Results in Brief*

Each of the six locations audited had included the NASA-directed Y2K requirements in solicitations and new contracts used to acquire IT assets. However, JPL had not included the NASA-directed requirements in all its applicable IT operations and maintenance contracts<sup>2</sup> as of January 31, 1999. Until all applicable contracts are modified to include the requirements, NASA lacks reasonable assurance that its systems will be Y2K compliant on January 1, 2000.

### *Background*

Software application programs that use a standard two-digit format (mm/dd/yy) to generate a date may not work properly after the year 2000. For example, "00" may not process properly because the "00" year may be considered 1900 - not 2000, or may be rejected as an invalid entry. Systems that will continue to function properly are designated "Y2K compliant." Systems that are not "Y2K compliant" are at risk of failure and may cause other systems to fail. Y2K compliance is defined in NASA's Year 2000 Test and Certification Guidelines and Requirements as information technology that:

. . . accurately processes date/time data (including, but not limited to, calculating, comparing, and sequencing) from, into, and between the twentieth and twenty-first centuries, and the years 1999 and 2000 and leap year calculations, to the extent that other information

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<sup>1</sup> John H. Glenn Research Center at Lewis Field (formerly Lewis Research Center), Goddard Space Flight Center, Lyndon B. Johnson Space Center, John F. Kennedy Space Center, and George C. Marshall Space Flight Center.

<sup>2</sup> Operations and maintenance contracts include purchase orders.

technology, used in combination with the information technology being acquired, properly exchanged date/time data with it.

In October 1996, NASA issued initial Y2K guidance for installations to follow when acquiring NASA IT assets and for contractors to follow when operating and maintaining NASA IT assets. In May 1998, NASA issued Procurement Information Circulars (PICs) 98-8 and 98-9, which included guidance for the respective areas. PIC 98-8 establishes a standard approach to address Y2K compliance in solicitations and new contracts. PIC 98-9 addresses existing NASA contracts by requiring additions to their statements of work. See Appendix B for more information regarding PICs 98-8 and 98-9.

### ***Incorporating Contract Compliance Requirements***

**Finding.** As of January 31, 1999, JPL had not incorporated the PIC 98-9 requirements into applicable operations and maintenance contracts that involved mission-critical and nonmission-critical systems. JPL management attributed its delay to other workload priorities. Untimely incorporation of the Y2K compliance requirements into NASA contracts adversely affects the Agency's ability to meet OMB's milestones for Y2K renovation, validation, and implementation phases and increases the potential for noncompliant Agency systems on January 1, 2000. Also, contractors may not be held accountable for ensuring Y2K compliance if the requirements are not incorporated.

**Y2K Phases and Milestones.** The requirements related to Y2K phases and milestones are OMB-directed and included in PICs 98-8 and 98-9. The requirements are also incorporated into NASA's contract for operation of JPL,<sup>3</sup> as follows:

- **Renovation.** Includes making and documenting software and hardware changes, and developing replacement systems. The contractor must complete renovation of affected software, hardware, and firmware<sup>4</sup> by September 30, 1998.
- **Validation.** Includes unit, integration, system, and end-to-end testing for Y2K compliance. The contractor must complete validation and testing of converted or replaced systems by January 31, 1999.
- **Implementation.** Includes acceptance testing and integration of converted and replaced systems into a production environment. The contractor must complete implementation by March 31, 1999.

For mission-critical systems, NASA required contracting officers to modify existing contracts by July 31, 1998. For nonmission-critical systems, contracting officers were to modify existing contracts as time and workload permitted, but in sufficient time to comply with the

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<sup>3</sup> JPL is a Federally Funded Research and Development Center operated by the California Institute of Technology under NASA contract NAS7-1407.

<sup>4</sup> Firmware is software stored in read-only memory or programmable read-only memory.

OMB-directed milestones. To meet the required time frames, contracting officers may modify contracts unilaterally.

The following table identifies the status of mission-critical and nonmission-critical contracts as of January 31, 1999, for the five Centers and JPL.

**Status of PIC 98-9 Requirements in Contracts**

Centers	Mission Critical				Nonmission Critical	
	Total Contracts	Contracts to Modify as of 7/31/98	Contracts to Modify as of 1/31/99		Total Contracts	Contracts to Modify as of 1/31/99
Glenn	2	0	0		27	0
Goddard	19	0	0		92	0
JPL	20	19	6		125	51
Johnson	5	0	0		78	0
Kennedy	3	0	0		16	0
Marshall	10	8	0		6	0
<b>Total</b>	<b>59</b>	<b>27</b>	<b>6</b>		<b>344</b>	<b>51</b>

As indicated in the table, JPL had not yet modified 6, or 30 percent, of its mission-critical contracts, and 51, or 40 percent, of its nonmission-critical contracts as of January 31, 1999 (all mission-critical contracts were to have been modified 6 months earlier). The remaining five NASA Centers had completed all modifications as of January 31, 1999.

Untimely inclusion of the Y2K compliance requirements into NASA's IT-related contracts reduces the Agency's assurance that its contractor-operated and contractor-maintained systems will be Y2K compliant on January 1, 2000. Without the requirements, contractors are not obligated to correct noncompliant systems. Also, without full contractor compliance, the Agency may be unable to meet OMB's milestones for Y2K renovation, validation, and implementation.

While JPL was continuing to make progress in adding the PIC 98-9 requirements to its contracts, the Agency has no assurance that JPL will complete implementation of all applicable systems by March 31, 1999. Further, JPL had not established a target date for modifying the remaining contracts, and we found no evidence that NASA Headquarters or the NASA Management Office at JPL was monitoring or tracking the status of JPL's progress in incorporating the PIC 98-9 requirements into the remaining contracts.

### ***Recommendations for Corrective Action***

The NASA Chief Information Officer, in coordination with the NASA Management Office at JPL, should:

1. Establish a target date(s) for JPL to incorporate the PIC 98-9 requirements into all applicable mission-critical and nonmission-critical contracts.
2. Monitor JPL's progress in meeting the target date(s) established in response to Recommendation 1.

### ***Management's Response***

Concur. The Chief Information Officer's (CIO) response (see Appendix D) concurred with each recommendation. The CIO established a target date of June 30, 1999, for JPL to complete the incorporation of PIC 98-9 requirements into the applicable mission-critical and nonmission-critical contracts. The CIO response also stated that NASA Headquarters, the NASA Management Office at JPL, and JPL would continue to monitor progress toward the target date. The CIO further stated that JPL had only one remaining mission-critical and six nonmission-critical subcontracts to be modified as of March 25, 1999.

The CIO provided additional comments on the report which we have addressed in Appendix E.

### ***Evaluation of Management's Response***

We consider management's actions taken and planned responsive to the recommendations.

## **Appendix A. Objectives, Scope and Methodology**

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### **Objectives**

Our objectives were to (1) evaluate the adequacy of NASA's efforts to renovate and validate systems with Y2K date problems, (2) evaluate the adequacy of NASA's oversight of contractor renovation and validation activities, and (3) determine whether NASA's Y2K reporting to the Office of Management and Budget (OMB) is accurate and well-supported. This report relates to the second objective only. Work on the other objectives either has been or will be addressed in another report.

Specifically, this report assesses the adequacy of incorporating Y2K compliance requirements in Y2K-affected solicitations and contracts for the operation and maintenance of NASA IT assets. PIC 98-8 requirements are intended to ensure that NASA acquires IT assets that are Y2K compliant. PIC 98-9 requires NASA contractors that operate and maintain IT assets on behalf of NASA to meet Y2K requirements within established milestones.

See Appendix C for Year 2000 audit reports issued by the NASA Office of Inspector General.

### **Scope and Methodology**

We performed work at John H. Glenn Research Center at Lewis Field (formerly Lewis Research Center), Goddard Space Flight Center, Lyndon B. Johnson Space Center, John F. Kennedy Space Center, George C. Marshall Space Flight Center, and the Jet Propulsion Laboratory. Specifically, we:

- Interviewed Y2K representatives and procurement personnel to determine the process and procedures used at each location for identifying contracts subject to Y2K and the status of contract modifications.
- Obtained data regarding the universe of contracts potentially subject to the PICs.
- Established the reliability of the data obtained by reviewing all contract files related to mission-critical systems and the judgmentally selected files related to nonmission-critical systems.
- Determined whether appropriate Y2K requirements had been incorporated into the contracts and whether adequate justifications existed for not including the requirements in the contracts.

### **Management Controls Reviewed**

We reviewed initial Y2K guidance, PICs 98-8 and 98-9, and the related processes and procedures used at each of the locations audited to determine Y2K contract modification requirements. In addition, we tested those controls to determine Center and JPL compliance. The controls generally appeared adequate, except for those discussed in our finding.



## **Appendix A**

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### **Audit Field Work**

We performed the audit field work for this report from August 1998 through January 1999. We conducted the audit in accordance with generally accepted government auditing standards.

## **Appendix B. Procurement Information Circulars 98-8 and 98-9**

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### **PIC 98-8, “Year 2000 Compliance – Solicitations and New Contracts”**

PIC 98-8 requires contracting officers to include the clause “Year 2000 Compliance (May 1998),” in its entirety, in all solicitations and new contracts for IT assets costing more than the small-purchase threshold, unless it is determined that IT assets will not be acquired. The contracting officers are to consult with the Contracting Officer’s Technical Representative or requiring organization for assistance in determining the applicability of the PIC to particular contracts.

PIC 98-8 also requires contractors to demonstrate, through documentation, that IT assets provided to NASA are Y2K compliant and to warranty the IT assets provided. The warranty requires contractors to repair or replace any noncompliant Y2K items at no added cost to the Government.

For new solicitations or contracts for the operation and maintenance of existing contracts, the contracting officer is required to identify the OMB phases and milestone dates for the renovation, validation, and implementation phases. Further, contractors are to provide documentation demonstrating that the milestones are being met.

### **PIC 98-9, “Year 2000 Compliance – Existing NASA Contracts”**

PIC 98-9 requires contracting officers to add statements to existing contracts for the operation and/or maintenance of IT systems. The statements relate to (1) the definition of “Year 2000 compliant”; (2) documentation requirements to support Y2K compliance; (3) milestones for renovation, validation and implementation; and (4) documentation requirements for meeting milestones.

Contracting officers are to prioritize the order of contract modifications based on mission criticality. The suspense date for modifying mission-critical contracts was July 31, 1998. All other existing IT-related contracts were to be modified as workload permitted, but in sufficient time to comply with the OMB-directed milestones of September 30, 1998, for renovation; January 31, 1999, for validation; and March 31, 1999, for implementation.

PIC 98-9 states that contracting officers should first attempt to modify applicable contracts bilaterally; however, to meet the required time frames, contracting officers may modify the contracts unilaterally. If modified unilaterally, contracting officers are to limit the Agency’s liability by inserting a “not-to-exceed” amount for each contract change.

## Appendix C. Summary of Prior Coverage

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The NASA Office of Inspector General has issued two reports relating to Y2K. These reports are summarized below.

**“Year 2000 Date Conversion – Assessment Phase,” Report Number IG-98-040, September 30, 1998.** Some NASA Centers did not have documented support for Y2K cost estimates reported to OMB and did not prepare estimates using a consistent methodology. Also, documentation did not always exist to support the manner in which Center assessments and decisions for Y2K compliance were conducted. The audit showed that NASA Centers also needed to improve the sharing of information on the status of Y2K compliance associated with commercial off-the-shelf products. We made three recommendations to assist NASA in addressing the Y2K date conversion problem. Management concurred with the two recommendations concerning documentation for Y2K assessments and the sharing of information on commercial off-the-shelf products. Management did not concur with the recommendation concerning guidance for Y2K cost estimates, stating that adequate guidance on cost estimation had been provided to NASA Centers. We reaffirmed our position on this recommendation and requested additional comments.

**“Year 2000 Program Oversight of NASA Production Contractors,” Report Number IG-99-004, December 17, 1998.** NASA lacks reasonable assurance that its production contractors will provide Y2K compliant data to support the Agency’s key financial and program management activities. This condition occurred because NASA had not asked the two principal Department of Defense agencies that perform the contract administration and audit functions at NASA’s contractor locations, the Defense Contract Audit Agency, and the Defense Contract Management Command, to conduct Y2K reviews at NASA’s major contractor locations. As a result, NASA risks using noncompliant data that may adversely affect the Agency’s control, budgeting, program management, and cost accounting activities. We made two recommendations to NASA relating to the Y2K status of its major contractors. Management concurred with the intent of the recommendations and issued a letter to the Defense Contract Audit Agency requesting data on Y2K coverage at the Agency’s major contractors. In addition, NASA issued a letter to its Center Procurement Officers instructing them to monitor Y2K problems identified by the Defense Contract Audit Agency.

## Appendix D. - Management's Response

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National Aeronautics and  
Space Administration  
**Office of the Administrator**  
Washington, DC 20546-0001



MAR 25 1999

TO: W/Inspector General

FROM: AO/Chief Information Officer

SUBJECT: NASA Response to Draft Report on Year 2000 Program Compliance Requirements in NASA Information Technology-Related Contracts Assignment Number A9901500

This responds to your draft report on the Audit of Year 2000 Program Compliance Requirements in NASA Information Technology-Related Contracts under Audit Assignment Number A9901500. This response represents the Agency's position relative to your report recommendations, and has been concurred on by the Associate Administrator for Space Science, and the Director of the NASA Management Office at the Jet Propulsion Laboratory (JPL).

NASA concurs with the two report recommendations:

"The NASA Chief Information Officer, in coordination with the NASA Management Office (NMO) at JPL, should:

1. Establish a target date(s) for JPL to incorporate the PIC 98-9 requirements into all applicable mission-critical and nonmission-critical contracts.
2. Monitor JPL's progress in meeting the target date(s) established in response to Recommendation 1."

The draft report overstates the number of subcontracts remaining to be modified by JPL (accurate data is provided within this response). As of the date of this response, JPL reports only one remaining mission-critical subcontract and six remaining nonmission-critical subcontracts to be modified. We would like your final report to reflect this current status. We do not anticipate any significant impact to ongoing Y2K work or NASA's preparedness for the Year 2000 as a result of this situation. The remaining seven subcontracts are currently being negotiated or JPL is awaiting responses from affected subcontractors. While JPL expects to complete modifications to these remaining subcontracts in the very near term, the target date for completing this action is no later than June 30, 1999. NASA Headquarters, NMO at JPL, and JPL will continue to monitor progress in meeting the target date, as we have for the last 10 months.

NASA does take exception with several areas of findings in the draft report. These exceptions are summarized below.

### 1. How PIC 98-8 and PIC 98-9 Requirements Apply to JPL

The draft report does not recognize how NASA applied the PIC 98-8 and PIC 98-9 requirements to JPL, given their unique status as a Federally Funded Research and Development Center (FFRDC). For the Centers referenced in the draft report, the number of contracts identified as remaining to be modified (contracts to modify as of July 31, 1998, and contracts to modify as of January 31, 1999) represent the number of prime contracts that involve IT at a given Center. For JPL, the numbers provided in the draft report do not represent prime contracts NASA holds with JPL/California Institute of Technology (Caltech), but rather represent the subcontracts and purchase orders held by Caltech in support of their role as a FFRDC. This presents a distorted impression of overall status relative to NASA and JPL and PIC 98-8 and PIC 98-9 requirements.

PIC 98-8 and 98-9 require that (NASA) contracting officers include specified Y2K requirements in new and existing Information Technology (IT) contracts. Contract No. NAS7-1407 is the current sponsoring agreement between NASA and Caltech, which establishes the relationship for the operation of the FFRDC at JPL. Subsequent to the last review of the Caltech contract in the summer of 1998, the NASA JPL NMO incorporated a tailored version of NASA's PIC 98-8 and PIC 98-9 requirements in section C-1(f) of the contract. This approach was reviewed and approved by NASA Headquarters.

Specifically, paragraphs (1) through (4) of section C-1(f) pertain to Caltech as a prime contractor. These paragraphs require that any IT provided, operated, and/or maintained under the contract by Caltech be Year 2000 compliant. Additionally, the contract requires Caltech to complete "renovation," "validation," and "implementation" in accordance with the schedules contained in PIC 98-8 and PIC 98-9. By including these requirements in the Caltech contract, NASA's requirement to incorporate clauses specified in PIC 98-8 and PIC 98-9 on prime contracts was accomplished.

Given the historical relationship between NASA and Caltech, and the unique role of JPL as a FFRDC, both NASA and Caltech agreed that JPL would meet requirements that were more consistent with a Center than a contractor. For example, the contract requires that Caltech follow the NASA Year 2000 Test and Certification Guidelines and Requirements dated June 19, 1998. All NASA Centers must meet these explicit requirements as part of the Y2K test and certification process. As an added assurance, it was mutually agreed that Caltech would flow down the PIC requirements to all existing subcontracts/letter contracts/purchase orders. In addition, Caltech would include the Y2K compliance clause specified in PIC 98-8 in all new solicitations and in modifications to existing subcontracts and purchase orders for new work requiring IT. To our knowledge, no other NASA prime contractor was required to incorporate the PIC 98-8 and PIC 98-9 requirements in their subcontracts. In summary, NASA and JPL negotiated an approach that went beyond the

## Appendix D

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requirements stated in the PIC's to provide an additional measure of reasonable assurance that was not required from other NASA prime contractors.

### **2. Accurate Status of JPL and the Incorporation of PIC Requirements**

The finding on page 2 of the draft report, "As of January 31, 1999, JPL had not incorporated the PIC 98-9 requirements into applicable operations and maintenance contracts that involved mission-critical and nonmission-critical systems." is both incorrect with respect to material facts and inconsistent with the data presented on page 3 of the draft report.

The following table shows the status according to the OIG draft report and the status reported by JPL to NASA. As of 1/31/1999, JPL incorporated the PIC 98-9 requirements into 19 of 22 mission-critical subcontracts and 85 of 98 nonmission-critical subcontracts.

Report	Mission Critical		Nonmission Critical	
	Total Subcontracts	Subcontracts to Modify as of 1/31/1999	Total Subcontracts	Subcontracts to Modify as of 1/31/1999
OIG Draft Report	20	6	125	51
JPL Database 1/29/1999	22	3	98	13
Current Status 3/23/1999	27	1	92	6

Our latest report from JPL (as of March 23, 1999) shows that there are only seven subcontracts that remain to be modified: one subcontract supporting a mission critical system and six subcontracts that support nonmission-critical systems. These seven subcontracts are currently being negotiated or JPL is awaiting responses from affected subcontractors. We do not anticipate any significant impact to ongoing Y2K work as a result of this situation.

### **3. Monitoring and Tracking the Status of JPL's Progress**

The statement: "... and we found no evidence that NASA Headquarters or the NASA Management Office at JPL was monitoring or tracking the status of JPL's progress in incorporating the PIC 98-9 requirements into the remaining contracts." is inaccurate. JPL provided to Inspector General auditors copies of spreadsheet reports that were sent to NASA. The list includes the following items:

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1. Answers to questions about JPL Contract Modifications, File: 981014 Y2K-C-PO-FIN-COPY1.xls. Provided to H. Kwok 1998-10-20.
2. Latest Spreadsheets: RPM Desk HD1:31216:981007 JPL Sep update.xls, RPM Desk HD1:31216:981007 JPL Sep update.xls. Provided to H. Kwok 1998-10-23.
3. Current Y2K Contract Modification Status Report, Excel spreadsheet dated 1998-12-15. Provided to R. Southerland 1998-12-18.
4. Y2k Contract Modification Status Reports for July, August, and September, (Excel spreadsheets). Provided to R. Southerland 98-12-18.

NASA specifically requested the information in these reports for tracking the status of subcontract modifications. NASA reviewed this information on a monthly basis. NASA was well aware of the issues associated with JPL modifying their respective subcontracts and was tracking progress appropriately.

#### **4. Impact on the Agency's Ability to Meet OMB Milestones**

The finding on page 2, "Untimely incorporation of the Y2K compliance requirements into NASA contracts adversely affects the Agency's ability to meet OMB's milestones for Y2K renovation, validation, and implementation phases and increases the potential for noncompliant Agency systems on January 1, 2000," is incorrect.

NASA carefully tracks Y2K status and progress for the mission critical and non-mission critical systems supported by JPL. To date, with the exception of an earlier schedule delay with the Deep Space Network, JPL has met all OMB milestones. In addition, JPL is:

- Certifying all inventory items against the NASA Y2K Test and Certifications Requirements and Guidelines
- Providing extensive support for the Agency's suite of Y2K end-to-end tests planned for 1999
- Preparing business continuity and contingency plans to address JPL supported programs, JPL core business processes, and mission critical systems.

In summary, NASA believes that JPL is taking reasonable steps to ensure NASA assets are Y2K compliant.

NASA will ensure that appropriate actions are taken to modify the remaining one mission critical and six non-mission critical JPL subcontracts. Given the other actions completed or

## Appendix D

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underway to address Y2K requirements at JPL, we do not believe this situation poses a significant risk to the Agency.

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Lee Holcomb

cc:

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HC/R. Crider  
JM/H. Robbins  
NMO/D. Bromley  
SP/B. Bennett  
SR/J. Bredekamp



## **Appendix E. - Management's Added Comments**

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The CIO concurred with the audit recommendations but took exception to several areas of the audit findings. His comments are summarized below, followed by our audit responses.

### **1. How PIC 98-8 and PIC 98-9 Requirements Apply to JPL**

The CIO stated that the draft report does not recognize how NASA applied the PIC 98-8 and PIC 98-9 requirements to JPL given JPL's unique status as a Federally Funded Research and Development Center (FFRDC) and, therefore, the draft report presents a distorted impression of JPL's overall status relative to other NASA Centers. The CIO acknowledged that PIC 98-9 requirements are applicable to subcontracts and purchase orders that support JPL's information technology (IT) role as an FFRDC, just as PIC 98-9 requirements are applicable to prime and subcontracts that support a NASA Center's IT requirements. The CIO also discussed the PIC 98-8 and 98-9 requirements in the NASA/Caltech contract and JPL's applicability to other NASA Y2K guidelines.

#### ***Audit Response***

The IT assets at JPL and at a Center are designed to serve the NASA mission. At Centers, prime contractors operate and maintain IT assets. At JPL, contractors that operate and maintain IT assets are called subcontractors because NASA's prime contract is with Caltech. JPL's subcontractors perform the same function performed by the prime contractors at other Centers and, therefore, the audit finding is based on a valid comparison. Further, the NASA/Caltech contract recognizes the requirements for JPL IT assets to be Y2K compliant and includes the PIC 98-8 and 98-9 requirements as part of the contract provisions. Accordingly, the Y2K IT requirements at JPL and the NASA Centers are essentially the same.

### **2. Accurate Status of JPL and the Incorporation of PIC Requirements**

The CIO stated that the draft report data relating to the number of mission-critical and nonmission-critical subcontracts, and their PIC 98-9 status, are incorrect. Using a JPL database, the CIO stated that as of January 29, 1999, 3 mission-critical and 13 nonmission-critical contracts needed to incorporate the PIC 98-9 requirements into their contract provisions. The OIG report identified the contract numbers as 6 and 51 for mission-critical and nonmission-critical contracts, respectively.

#### ***Audit Response***

The OIG physically verified the incorporation of PIC clauses into all mission-critical and selected nonmission-critical contracts and purchase orders. We did not audit JPL's database for accuracy and completeness but did provide the results of our physical

## Appendix E

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verification to the JPL manager for the Y2K contract modifications. We confirmed our numbers were in agreement as of January 31, 1999.

### **3. Monitoring and Tracking the Status of JPL's Progress**

The CIO took exception to the report's statement that neither NASA Headquarters nor the NASA Management Office at JPL was monitoring or tracking JPL's progress in incorporating PIC 98-9 requirements into the remaining contracts. The CIO stated that NASA was well aware of JPL's progress in making the contract modifications and that NASA was reviewing JPL's status monthly.

#### ***Audit Response***

Although JPL's Y2K activities were being reported to NASA, nothing came to our attention to indicate that NASA was effectively tracking and monitoring the details of JPL's progress toward incorporating the PICs into all applicable contracts. If effective tracking and monitoring had taken place, NASA management should have taken actions to ensure that JPL was meeting the NASA/Caltech contract requirements within the established timeframes, especially since JPL had missed its milestones by many months. Further, the key purpose of the NASA Management Office at JPL is to oversee JPL operations. This would include ensuring that JPL timely satisfies the NASA/Caltech contract requirements relating to PIC 98-9.

### **4. Impact on the Agency's Ability to Meet OMB Milestones**

The CIO took exception to our conclusion that JPL's untimely incorporation of PIC requirements could affect the Agency's ability to be Y2K compliant by January 1, 2000. The NASA CIO cited specific actions taken by JPL (such as meeting milestones, certification of all inventory items, support for the Agency's Y2K end-to-end testing, and preparation of continuity and contingency plans) that he believes represent reasonable steps to ensure that NASA assets are Y2K compliant.

#### ***Audit Response***

NASA and JPL are highly dependent on contractors to operate and maintain their IT assets and to ensure the IT assets are Y2K compliant. Without timely inclusion of the Y2K requirements into contracts used to maintain and operate JPL's IT assets, NASA cannot be reasonably assured that its IT assets will be Y2K compliant by January 1, 2000. At the time of our audit, the actions listed by management had not resulted in incorporation of the required clauses in all applicable JPL contracts.

## **Appendix F. Report Distribution**

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### **NASA Headquarters**

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John F. Kennedy Space Center  
Langley Research Center  
George C. Marshall Space Flight Center  
John C. Stennis Space Center

## **Non-NASA Federal Organizations and Individuals**

Assistant to the President for Science and Technology Policy

Assistant to the President and Chair, President's Council on Y2K Conversion

Deputy Director of Management, Office of Management and Budget

Deputy Associate Director, Energy and Science Division, Office of Management and Budget

Budget Examiner, Energy Science Division, Office of Management and Budget

Associate Director, National Security and International Affairs Division,  
General Accounting Office

Special Counsel, House Subcommittee on National Security, International Affairs,  
and Criminal Justice

Professional Assistant, Senate Subcommittee on Science, Technology, and Space

## **Chairman and Ranking Minority Member -- Congressional Committees and Subcommittees**

Senate Committee on Appropriations

Senate Subcommittee on VA, HUD and Independent Agencies

Senate Committee on Commerce, Science, and Transportation

Senate Subcommittee on Science, Technology, and Space

Senate Committee on Governmental Affairs

House Committee on Appropriations

House Subcommittee on VA, HUD and Independent Agencies

House Committee on Government Reform and Oversight

House Committee on Science

House Subcommittee on Space and Aeronautics

## **Congressional Member**

Honorable Pete Sessions, U.S. House of Representatives

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