

25210 - Water Treatment Plant Operator	27.78
27000 - Protective Service Occupations	
27004 - Alarm Monitor	17.38
27007 - Baggage Inspector	14.34
27008 - Corrections Officer	34.90
27010 - Court Security Officer	36.56
27030 - Detection Dog Handler	17.06
27040 - Detention Officer	34.90
27070 - Firefighter	32.91
27101 - Guard I	14.34
27102 - Guard II	17.06
27131 - Police Officer I	40.20
27132 - Police Officer II	44.68
28000 - Recreation Occupations	
28041 - Carnival Equipment Operator	13.09
28042 - Carnival Equipment Repairer	13.81
28043 - Carnival Equipment Worker	10.58
28210 - Gate Attendant/Gate Tender	16.40
28310 - Lifeguard	10.96
28350 - Park Attendant (Aide)	16.58
28510 - Recreation Aide/Health Facility Attendant	14.14
28515 - Recreation Specialist	17.46
28630 - Sports Official	13.04
28690 - Swimming Pool Operator	19.13
29000 - Stevedoring/Longshoremen Occupational Services	
29010 - Blocker And Bracer	24.24
29020 - Hatch Tender	24.24
29030 - Line Handler	24.24
29041 - Stevedore I	22.85
29042 - Stevedore II	25.62
30000 - Technical Occupations	
30010 - Air Traffic Control Specialist, Center (HFO) (2)	41.48
30011 - Air Traffic Control Specialist, Station (HFO) (2)	28.60
30012 - Air Traffic Control Specialist, Terminal (HFO) (2)	31.50
30021 - Archeological Technician I	18.57
30022 - Archeological Technician II	21.38
30023 - Archeological Technician III	29.54
30030 - Cartographic Technician	32.81
30040 - Civil Engineering Technician	29.29
30061 - Drafter/CAD Operator I	25.69
30062 - Drafter/CAD Operator II	28.74
30063 - Drafter/CAD Operator III	32.03
30064 - Drafter/CAD Operator IV	38.48
30081 - Engineering Technician I	18.00
30082 - Engineering Technician II	20.21
30083 - Engineering Technician III	22.62
30084 - Engineering Technician IV	28.01
30085 - Engineering Technician V	34.26
30086 - Engineering Technician VI	41.25
30090 - Environmental Technician	25.64
30210 - Laboratory Technician	21.91
30240 - Mathematical Technician	34.98
30361 - Paralegal/Legal Assistant I	22.82
30362 - Paralegal/Legal Assistant II	28.26
30363 - Paralegal/Legal Assistant III	34.57
30364 - Paralegal/Legal Assistant IV	41.82
30390 - Photo-Optics Technician	35.60

30461 - Technical Writer I	25.38
30462 - Technical Writer II	31.05
30463 - Technical Writer III	37.57
30491 - Unexploded Ordnance (UXO) Technician I	26.36
30492 - Unexploded Ordnance (UXO) Technician II	31.89
30493 - Unexploded Ordnance (UXO) Technician III	38.23
30494 - Unexploded (UXO) Safety Escort	26.36
30495 - Unexploded (UXO) Sweep Personnel	26.26
30620 - Weather Observer, Combined Upper Air Or Surface Programs (2)	28.34
30621 - Weather Observer, Senior (2)	31.45
31000 - Transportation/Mobile Equipment Operation Occupations	
31020 - Bus Aide	12.99
31030 - Bus Driver	18.06
31043 - Driver Courier	17.33
31260 - Parking and Lot Attendant	10.36
31290 - Shuttle Bus Driver	18.02
31310 - Taxi Driver	12.29
31361 - Truckdriver, Light	18.02
31362 - Truckdriver, Medium	18.94
31363 - Truckdriver, Heavy	20.16
31364 - Truckdriver, Tractor-Trailer	20.16
99000 - Miscellaneous Occupations	
99030 - Cashier	11.40
99050 - Desk Clerk	10.86
99095 - Embalmer	25.89
99251 - Laboratory Animal Caretaker I	12.29
99252 - Laboratory Animal Caretaker II	13.30
99310 - Mortician	26.71
99410 - Pest Controller	17.21
99510 - Photofinishing Worker	13.17
99710 - Recycling Laborer	18.56
99711 - Recycling Specialist	22.31
99730 - Refuse Collector	16.71
99810 - Sales Clerk	13.17
99820 - School Crossing Guard	14.32
99830 - Survey Party Chief	23.76
99831 - Surveying Aide	11.95
99832 - Surveying Technician	15.07
99840 - Vending Machine Attendant	14.98
99841 - Vending Machine Repairer	17.39
99842 - Vending Machine Repairer Helper	14.98

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ALL OCCUPATIONS LISTED ABOVE RECEIVE THE FOLLOWING BENEFITS:

HEALTH & WELFARE: Life, accident, and health insurance plans, sick leave, pension plans, civic and personal leave, severance pay, and savings and thrift plans.

Minimum employer contributions costing an average of \$3.24 per hour computed on the basis of all hours worked by service employees employed on the contract.

VACATION: 2 weeks paid vacation after 1 year of service with a contractor or successor; 3 weeks after 5 years, and 4 weeks after 15 years. Length of service includes the whole span of continuous service with the present contractor or

successor, wherever employed, and with the predecessor contractors in the performance of similar work at the same Federal facility. (Reg. 29 CFR 4.173)

HOLIDAYS: A minimum of eleven paid holidays per year: New Year's Day, Martin Luther King Jr's Birthday, Washington's Birthday, Good Friday, Memorial Day, Independence Day, Labor Day, Columbus Day, Veterans' Day, Thanksgiving Day, and Christmas Day. A contractor may substitute for any of the named holidays another day off with pay in accordance with a plan communicated to the employees involved.) (See 29 CFR 4.174)

THE OCCUPATIONS WHICH HAVE PARENTHESES AFTER THEM RECEIVE THE FOLLOWING BENEFITS (as numbered):

1) COMPUTER EMPLOYEES: Under the SCA at section 8(b), this wage determination does not apply to any employee who individually qualifies as a bona fide executive, administrative, or professional employee as defined in 29 C.F.R. Part 541. Because most Computer System Analysts and Computer Programmers who are compensated at a rate not less than \$27.63 (or on a salary or fee basis at a rate not less than \$455 per week) an hour would likely qualify as exempt computer professionals, (29 C.F.R. 541.400) wage rates may not be listed on this wage determination for all occupations within those job families. In addition, because this wage determination may not list a wage rate for some or all occupations within those job families if the survey data indicates that the prevailing wage rate for the occupation equals or exceeds \$27.63 per hour conformances may be necessary for certain nonexempt employees. For example, if an individual employee is nonexempt but nevertheless performs duties within the scope of one of the Computer Systems Analyst or Computer Programmer occupations for which this wage determination does not specify an SCA wage rate, then the wage rate for that employee must be conformed in accordance with the conformance procedures described in the conformance note included on this wage determination.

Additionally, because job titles vary widely and change quickly in the computer industry, job titles are not determinative of the application of the computer professional exemption. Therefore, the exemption applies only to computer employees who satisfy the compensation requirements and whose primary duty consists of:

(1) The application of systems analysis techniques and procedures, including consulting with users, to determine hardware, software or system functional specifications;

(2) The design, development, documentation, analysis, creation, testing or modification of computer systems or programs, including prototypes, based on and related to user or system design specifications;

(3) The design, documentation, testing, creation or modification of computer programs related to machine operating systems; or

(4) A combination of the aforementioned duties, the performance of which requires the same level of skills. (29 C.F.R. 541.400).

2) AIR TRAFFIC CONTROLLERS AND WEATHER OBSERVERS - NIGHT PAY & SUNDAY PAY: If you work at night as part of a regular tour of duty, you will earn a night differential and receive an additional 10% of basic pay for any hours worked between 6pm and 6am. If you are a full-time employed (40 hours a week) and Sunday is part of your regularly scheduled workweek, you are paid at your rate of basic pay plus a Sunday premium of 25% of your basic rate for each hour of Sunday work which is not overtime (i.e. occasional work on Sunday outside the normal tour of duty is considered overtime work).

HAZARDOUS PAY DIFFERENTIAL: An 8 percent differential is applicable to employees employed in a position that represents a high degree of hazard when working with or in close proximity to ordnance, explosives, and incendiary materials. This includes work such as screening, blending, dying, mixing, and pressing of sensitive ordnance, explosives, and pyrotechnic compositions such as lead azide, black powder and photoflash powder. All dry-house activities involving propellants or explosives. Demilitarization, modification, renovation, demolition, and maintenance operations on sensitive ordnance, explosives and incendiary materials. All operations involving regrading and cleaning of artillery ranges.

A 4 percent differential is applicable to employees employed in a position that represents a low degree of hazard when working with, or in close proximity to ordnance, (or employees possibly adjacent to) explosives and incendiary materials which involves potential injury such as laceration of hands, face, or arms of the employee engaged in the operation, irritation of the skin, minor burns and the like; minimal damage to immediate or adjacent work area or equipment being used. All operations involving, unloading, storage, and hauling of ordnance, explosive, and incendiary ordnance material other than small arms ammunition. These differentials are only applicable to work that has been specifically designated by the agency for ordnance, explosives, and incendiary material differential pay.

**\*\* UNIFORM ALLOWANCE \*\***

If employees are required to wear uniforms in the performance of this contract (either by the terms of the Government contract, by the employer, by the state or local law, etc.), the cost of furnishing such uniforms and maintaining (by laundering or dry cleaning) such uniforms is an expense that may not be borne by an employee where such cost reduces the hourly rate below that required by the wage determination. The Department of Labor will accept payment in accordance with the following standards as compliance:

The contractor or subcontractor is required to furnish all employees with an adequate number of uniforms without cost or to reimburse employees for the actual cost of the uniforms. In addition, where uniform cleaning and maintenance is made the responsibility of the employee, all contractors and subcontractors subject to this wage determination shall (in the absence of a bona fide collective bargaining agreement providing for a different amount, or the furnishing of contrary affirmative proof as to the actual cost), reimburse all employees for such cleaning and maintenance at a rate of \$3.35 per week (or \$.67 cents per day). However, in those instances where the uniforms furnished are made of "wash and wear" materials, may be routinely washed and dried with other personal garments, and do not require any special treatment such as dry cleaning, daily washing, or commercial laundering in order to meet the cleanliness or appearance standards set by the terms of the Government contract, by the contractor, by law, or by the nature of the work, there is no requirement that employees be reimbursed for uniform maintenance costs.

The duties of employees under job titles listed are those described in the "Service Contract Act Directory of Occupations", Fifth Edition, April 2006, unless otherwise indicated. Copies of the Directory are available on the Internet. A links to the Directory may be found on the WHD home page at <http://www.dol.gov/esa/whd/> or through the Wage Determinations On-Line (WDOL) Web site at <http://wdol.gov/>.

## REQUEST FOR AUTHORIZATION OF ADDITIONAL CLASSIFICATION AND WAGE RATE {Standard Form 1444 (SF 1444)}

## Conformance Process:

The contracting officer shall require that any class of service employee which is not listed herein and which is to be employed under the contract (i.e., the work to be performed is not performed by any classification listed in the wage determination), be classified by the contractor so as to provide a reasonable relationship (i.e., appropriate level of skill comparison) between such unlisted classifications and the classifications listed in the wage determination. Such conformed classes of employees shall be paid the monetary wages and furnished the fringe benefits as are determined. Such conforming process shall be initiated by the contractor prior to the performance of contract work by such unlisted class(es) of employees. The conformed classification, wage rate, and/or fringe benefits shall be retroactive to the commencement date of the contract. {See Section 4.6 (C) (vi)} When multiple wage determinations are included in a contract, a separate SF 1444 should be prepared for each wage determination to which a class(es) is to be conformed.

The process for preparing a conformance request is as follows:

- 1) When preparing the bid, the contractor identifies the need for a conformed occupation) and computes a proposed rate).
- 2) After contract award, the contractor prepares a written report listing in order proposed classification title), a Federal grade equivalency (FGE) for each proposed classification), job description), and rationale for proposed wage rate), including information regarding the agreement or disagreement of the authorized representative of the employees involved, or where there is no authorized representative, the employees themselves. This report should be submitted to the contracting officer no later than 30 days after such unlisted class(es) of employees performs any contract work.
- 3) The contracting officer reviews the proposed action and promptly submits a report of the action, together with the agency's recommendations and pertinent information including the position of the contractor and the employees, to the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, for review. (See section 4.6(b) (2) of Regulations 29 CFR Part 4).
- 4) Within 30 days of receipt, the Wage and Hour Division approves, modifies, or disapproves the action via transmittal to the agency contracting officer, or notifies the contracting officer that additional time will be required to process the request.
- 5) The contracting officer transmits the Wage and Hour decision to the contractor.
- 6) The contractor informs the affected employees.

Information required by the Regulations must be submitted on SF 1444 or bond paper.

When preparing a conformance request, the "Service Contract Act Directory of Occupations" (the Directory) should be used to compare job definitions to insure that duties requested are not performed by a classification already listed in

the wage determination. Remember, it is not the job title, but the required tasks that determine whether a class is included in an established wage determination. Conformances may not be used to artificially split, combine, or subdivide classifications listed in the wage determination.

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TITLE OF CONTRACT, PRODUCT, SOW, ETC. Aerospace Testing and Facilities Operations and Maintenance (ATOM)	CONTRACT/RFP NO. NNA09DB39C	DRL DATE/MOD DATE June 9, 2009
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1. LINE ITEM NO.	2. DRL TITLE	3. FREQUENCY	4. SUBMISSION DATE	5. COPIES
1	Initial Financial Management Report	See Remarks	See Remarks	See Distribution
6. DATA TYPE: <input checked="" type="checkbox"/> Scheduled submittal <input type="checkbox"/> Submittal upon request <input type="checkbox"/> Submitted upon update <input type="checkbox"/> Gov't Approval Required				
7. DISTRIBUTION			8. REMARKS	
<p><b>Electronic submission to:</b></p> <p>Contracting Officer's Technical Representative (COTR) Code AO, M/S 227-4 (1 cy)                      CO Code JAC, M/S: 227-4 (1 cy)                      Financial Management Division, Code CF, M/S 203-20 (1 cy)                      Resource Executive, Code AO, M/S 227-4 (1 cy)</p>			<p>Submission 10 working days after effective date of contract.</p> <p>An initial financial management report shall be submitted by the Contractor and each major subcontractor on NASA Form 533Q (or computer-generated version) in accordance with the instructions on the reverse side of the forms and the NASA Policy Guidance (NPG) 9501.2, <i>NASA Contractor Financial Management Reporting</i>, at URL <a href="http://nodis3.gsfc.nasa.gov/library/displayDir.cfm?Internal_ID=N_PG_9501_02D_&amp;page_name=main">http://nodis3.gsfc.nasa.gov/library/displayDir.cfm?Internal_ID=N_PG_9501_02D_&amp;page_name=main</a> and as set forth below.</p> <p>Reporting categories shall be elements of cost including direct labor hours (excluding subcontract); direct labor hours (major subcontractors); direct labor costs (separated by prime and major subcontractor); overhead; other direct costs (ODCs), G&amp;A; total costs; incentive fee and award fee; total cost plus fee. Overtime is to be reported separately for each of the above categories. ODCs include travel, material purchases, and subcontracts (other than major subcontractors). All of the above data is to be submitted for the base period.</p>	



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1. LINE ITEM NO. 2	2. DRL TITLE Monthly Financial Management Report	3. FREQUENCY Monthly	4. SUBMISSION DATE See Remarks	5. COPIES See Distribution
6. DATA TYPE: <input checked="" type="checkbox"/> Scheduled submittal <input type="checkbox"/> Submittal upon request <input type="checkbox"/> Submitted upon update <input type="checkbox"/> Gov't Approval Required				
7. DISTRIBUTION Electronic submission to:  Contracting Officer's Technical Representative (COTR) Code AO, M/S 227-4 (1 cy) CO Code JAC, M/S: 227-4 (1 cy) Financial Management Division, Code CF, M/S 203-20 (1 cy) Resource Executive, Code AO, M/S 227-4 (1 cy)			8. REMARKS The Contractor shall deliver the NF 533M report no later than the 10th working day after end of accounting month being reported. And in accordance with the instructions on the reverse side of the forms and the NASA Policy Guidance (NPG) 9501.2, <i>NASA Contractor Financial Management Reporting</i> , at URL <a href="http://nodis3.gsfc.nasa.gov/library/displayDir.cfm?Internal_ID=N_PG_9501_002D_&amp;page_name=main">http://nodis3.gsfc.nasa.gov/library/displayDir.cfm?Internal_ID=N_PG_9501_002D_&amp;page_name=main</a> and as set forth below.  Reporting categories shall be elements of cost including direct labor hours (excluding subcontract); direct labor hours (major subcontractor); direct labor costs (separated by prime and major subcontractor); overhead; other direct costs (ODCs), G&A; total costs; incentive fee and award fee; total cost plus fee. Overtime is to be reported separately for each of the above categories. ODCs include travel, material purchases, and subcontracts (other than major subcontractors). All of the above data is to be submitted for the reporting period, the cumulative periods, the Government Fiscal Year cumulative, and the estimated costs to completion and at the contract level and division, branch, project, or category (e.g. maintenance, operations, facility) level. Formats will be agreed upon between the Contractor, COTR, and Contracting Officer.  Variances under and exceeding <b>5 percent</b> between planned dollars and actual dollars for each reporting category (at the total contract level only) <b>shall be explained</b> . (Reasonable variance explanation includes the issue, monthly and/or total impacts, corrective actions and dates.).	

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1. LINE ITEM NO.	2. DRL TITLE	3. FREQUENCY	4. SUBMISSION DATE	5. COPIES
3	Quarterly Financial Management Report	Quarterly	See Remarks	See Distribution
6. DATA TYPE: <input checked="" type="checkbox"/> Scheduled submittal <input type="checkbox"/> Submittal upon request <input type="checkbox"/> Submitted upon update <input type="checkbox"/> Gov't Approval Required				
7. DISTRIBUTION			8. REMARKS	
<p><b>Electronic submission to:</b></p> <p>COTR; Code AO, M/S 227-4 (1 cy)                      CO; Code JAC, M/S: 227-4 (1 cy)                      Financial Management Division, Code CF, M/S 203-20 (1 cy)                      Resource Executive, Code AO, M/S 227-4 (1 cy)</p>			<p>The Contractor shall submit the NF 533Q not later than the 15th day of the month preceding the quarter (based on the Government Fiscal Year) being projected in accordance with the instructions on the reverse side of the forms and the NASA Policy Guidance (NPG) 9501.2, <i>NASA Contractor Financial Management Reporting</i>, at URL <a href="http://nodis3.gsfc.nasa.gov/library/displayDir.cfm?Internal_ID=N_PG_9501_02D_&amp;page_name=main">http://nodis3.gsfc.nasa.gov/library/displayDir.cfm?Internal_ID=N_PG_9501_02D_&amp;page_name=main</a> and as set forth below.</p> <p>Reporting categories shall be elements of cost including direct labor hours (excluding subcontract); direct labor hours (major subcontractors); direct labor costs (separated by prime and major subcontractor); overhead; other direct costs (ODCs), G&amp;A; total costs; incentive fee and award fee; total cost plus fee. Overtime is to be reported separately for each of the above categories. ODCs include travel, material purchases, and subcontracts (other than major subcontractors). All of the above data is to be submitted for the reporting period, the cumulative periods, the Government Fiscal Year cumulative, and the estimated costs to completion and at the contract level and division, branch, project, or category (e.g. maintenance, operations, facility) level. Formats will be agreed upon between the Contractor, COTR, and Contracting Officer.</p> <p>Variances under and exceeding <b>5 percent</b> between planned dollars and actual dollars for each reporting category (at the total contract level only) <b>shall be explained</b>. (Reasonable variance explanation includes the issue, monthly and/or total impacts, corrective actions and dates.)</p>	

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1. LINE ITEM NO.	2. DRL TITLE	3. FREQUENCY	4. SUBMISSION DATE	5. COPIES
4	Monthly Technical Progress Report	Monthly	See Remarks	See Distribution
	6. DATA TYPE: <input checked="" type="checkbox"/> Scheduled submittal <input type="checkbox"/> Submittal upon request <input type="checkbox"/> Submitted upon update <input type="checkbox"/> Gov't Approval Required			
	7. DISTRIBUTION Electronic submittal to: COTR; Code AO, M/S 227-4 CO; Code JAC, M/S: 227-4 New Technology Representative, Code DK, M/S 202A-3 (1 cy) Code AO Division Chief, M/S 227-4 Code TSF Branch Chief, M/S 227-4	8. REMARKS The Contractor shall submit separate monthly status reports of all work accomplished during each month of contract performance. Reports shall be in narrative form and brief and informal in content. Monthly reports shall include: safety issues and reviews (including results of required walk-thru of Contractor employee areas), a brief status of progress; a discussion of issues or problems that may impede performance with potential resolutions, and recommended action items for both the Government and the Contractor; staffing data and progress towards the metrics listed in Attachment J.1(a)12.		
5	Contractor Monthly Accident Report	Monthly	See Remarks	See Distribution
	6. DATA TYPE: <input checked="" type="checkbox"/> Scheduled submittal <input type="checkbox"/> Submittal upon request <input type="checkbox"/> Submitted upon update <input type="checkbox"/> Gov't Approval Required			
	7. DISTRIBUTION Submittal shall be made in accordance with the requirements found at: <a href="http://cmar.arc.nasa.gov/">http://cmar.arc.nasa.gov/</a>	8. REMARKS The Contractor electronically shall submit the Monthly Accident Report data to the Contractor Monthly Accident Report web-based system within 10 working days after each full month of completed service. A negative report is required.		
6	Mishap Report	See Remarks	See Remarks	See Distribution
	6. DATA TYPE: <input checked="" type="checkbox"/> Scheduled submittal <input type="checkbox"/> Submittal upon request <input type="checkbox"/> Submitted upon update <input type="checkbox"/> Gov't Approval Required			
	7. DISTRIBUTION Original filed through IRIS at <a href="http://nasa.ex3host.com/IRIS">http://nasa.ex3host.com/IRIS</a> Copies: COTR; Code TSA, M/S 230-2 (1 cy electronic) CO; Code JAC, M/S 241-1 (1 cy) Office of Occupational Safety, Health, and Environmental Services, Code QH, M/S 237-1	8. REMARKS The Contractor shall file a mishap report using the Incident Reporting Information System (IRIS) <a href="http://nasa.ex3host.com/IRIS">http://nasa.ex3host.com/IRIS</a> within 24 hours after the incident for initial notification of any accidental injury or illness to a NASA civil servant, contractor or visitor and NASA related accidental human injury, illness, property damage or close call;		

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1. LINE ITEM NO.	2. DRL TITLE	3. FREQUENCY	4. SUBMISSION DATE	5. COPIES
7	New Technology Reports	See Remarks	See Remarks	See Distribution
6. DATA TYPE: <input checked="" type="checkbox"/> Scheduled submittal <input type="checkbox"/> Submittal upon request <input type="checkbox"/> Submitted upon update <input checked="" type="checkbox"/> Gov't Approval Required				
7. DISTRIBUTION New Technology Representative, Code DK, M/S 202A-3 (original) CO, Code JAC, M/S: 227-4 (1 cy) Patent Representative, Code DL, M/S 202A-4 (1 cy)			8. REMARKS Electronic submission via NASA's Electronic New Technology Reporting (eNTRe) web system at <a href="http://invention.nasa.gov/">http://invention.nasa.gov/</a> is encouraged. NASA Form 1679, <i>Disclosure of Invention and New Technology (Including Software)</i> , or equivalent, may also be used in accordance with NFS 1852.227-70, <i>New Technology</i> . A negative report is required even if there is no New Technology to report.	
8	Centrally Reportable Equipment (DOD Industrial Plant Equipment Requisition System (DD 1419))	As Needed	See Remarks	See Distribution
6. DATA TYPE: <input checked="" type="checkbox"/> Scheduled submittal <input type="checkbox"/> Submittal upon request <input type="checkbox"/> Submitted upon update <input checked="" type="checkbox"/> Gov't Approval Required				
7. DISTRIBUTION Through COTR, code AO, M/S 227-4 Through CO, Code JAC, M/S 227-4; to Equipment Management Specialist, Code JFS, M/S 255-2 (1 cy)			8. REMARKS The Contractor shall submit a DD Form 1419, <i>DOD Industrial Plan Equipment Requisition</i> , for property screening 30 days prior to purchase of property. The DD Form 1419 will be prepared, for each item of centrally reportable equipment to be acquired over \$1,000, in accordance with NFS 1845.502-70 and the preparation instructions in NFS 1845.7102.	
9.	Non-Disclosure Agreements	Once	Prior to Starting Work	See Distribution
6. DATA TYPE: <input type="checkbox"/> Scheduled submittal <input checked="" type="checkbox"/> Submittal upon request <input type="checkbox"/> Submitted upon update <input type="checkbox"/> Gov't Approval Required				
7. DISTRIBUTION CO, Code JAC, M/S 227-4 (1 cy electronic) Code AO; M/S: 227-4 (1 cy electronic) Task Requestor listed on Task Order			8. REMARKS All contractor personnel shall be required to sign non-disclosure agreements prior to starting work and may be required to sign Center, contract, and/or contractor specific non-disclosure agreements as part of the closing of certain specific contractual agreements.	

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1. LINE ITEM NO.	2. DRL TITLE	3. FREQUENCY	4. SUBMISSION DATE	5. COPIES
10	Property Management Report	Quarterly	See Remarks	See Distribution
6. DATA TYPE: <input checked="" type="checkbox"/> Scheduled submittal <input type="checkbox"/> Submittal upon request <input type="checkbox"/> Submitted upon update <input type="checkbox"/> Gov't Approval Required				
7. DISTRIBUTION COTR; Code AO; M/S: 227-4 (1 cy) CO, Code JAC, M/S: 227-4 (1 cy) Equipment Management Specialist, Code JFS, M/S 255-2 (original)		8. REMARKS The Contractor shall submit a Property Management Report itemizing all purchases for the quarter. All orders, items received, and prices must be included. The Contractor shall use DD Form 1149, DOD Requisition and Invoice/Shipping Document, to report Government property that is centrally reportable equipment to the NASA Equipment Management System (NEMS): 1) at the time of receipt and acceptance of accountability; 2) when major changes occur in the data initially submitted to NASA; and, 3) when the equipment is no longer required for or actively being used in pursuit of this contract. The Contractor shall indicate the current condition code of equipment reported pursuant to (3) above. Reportable data shall be forwarded through the Contracting Officer within 15 working days after the event that created the need for their preparation and shall be marked "FOR NEMS".		
11.	IT Security Training Progress Report	Monthly updates	See Remarks	See Distribution
6. DATA TYPE: <input checked="" type="checkbox"/> Scheduled submittal <input type="checkbox"/> Submittal upon request <input type="checkbox"/> Submitted upon update <input type="checkbox"/> Gov't Approval Required				
Reports may be sent electronically to: COTR; Code AO; M/S: 227-4 (1 cy) CO, Code JAC, M/S: 227-4 (1 cy)		Information Technology (IT) security training is mandatory for all federal employees, contractors, students and associates who use NASA Federal IT assets and information. This applies to both supervisory and non-supervisory personnel and is available through the System for Administration, Training, and Educational Resources for NASA (SATERN) at <a href="https://satern.nasa.gov/">https://satern.nasa.gov/</a>  Center-wide progress toward 100 percent completion of this requirement will be tracked by organization and reported to center management. To ensure that Ames Research Center meets the required agency metrics, the center must be 100 percent complete in IT security training each year by the deadline of May 30.  An individual's failure to meet the training deadline will result in his or her computer system being disconnected from the network.		

CONTRACT DATA REQUIREMENTS LIST (CDRL)

TITLE OF CONTRACT, PRODUCT, SOW, ETC. Aerospace Testing and Facilities Operations and Maintenance (ATOM)	CONTRACT/RFP NO. NNA09DB39C	DRL DATE/MOD DATE June 9, 2009
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1. LINE ITEM NO.	2. DRL TITLE	3. FREQUENCY	4. SUBMISSION DATE	5. COPIES
12.	Subcontract Consent Package	See Remarks	See Remarks	See Distribution
6. DATA TYPE: <input type="checkbox"/> Scheduled submittal <input checked="" type="checkbox"/> Submittal upon request <input type="checkbox"/> Submitted upon update <input type="checkbox"/> Gov't Approval Required				
7. DISTRIBUTION CO, Code JAC, M/S 227-4 (1 cy)		8. REMARKS The Contractor shall submit subcontract consent package(s) in accordance with FAR 52.244-2 or as specifically requested by the Contracting Officer.		
13.	Phase-Out Plan	Once	See Remarks	See Distribution
6. DATA TYPE: <input checked="" type="checkbox"/> Scheduled submittal <input type="checkbox"/> Submittal upon request <input type="checkbox"/> Submitted upon update <input type="checkbox"/> Gov't Approval Required				
7. DISTRIBUTION CO, Code JAC, M/S 227-4 (1 cy electronic) COTR; Code AO, M/S 227-4 (1 cy)		8. REMARKS The Contractor shall provide a Phase-Out Plan for the complete and orderly transfer of duties and records to the incoming Contractor. The Plan shall address issues pertinent to the continuation of safe operations for all areas of responsibility under the contract.  The Phase-Out Plan is required 60 days before the end of the contract's period of performance.		
14.	Safety and Health Plan	See Remarks	See Remarks	See Distribution
6. DATA TYPE: <input checked="" type="checkbox"/> Scheduled submittal <input type="checkbox"/> Submittal upon request <input type="checkbox"/> Submitted upon update <input checked="" type="checkbox"/> Gov't Approval Required				
7. DISTRIBUTION CO, Code JAC, M/S 227-4 (1 cy electronic)  COTR; Code AO, M/S 227-4 (1 cy electronic)		8. REMARKS The Contractor shall provide a Safety and Health Plan addressing issues pertinent to safe operation in all areas of responsibility under the contract for review by the Ames Occupational Safety, Health and Medical Services Offices. The plan shall include health and environmental compliance regulations applicable to this contract. The plan is required before contract award and shall be updated in accordance with NFS clause 1852.223-70, Safety and Health and distributed as shown..		

CONTRACT DATA REQUIREMENTS LIST (CDRL)

TITLE OF CONTRACT, PRODUCT, SOW, ETC. Aerospace Testing and Facilities Operations and Maintenance (ATOM)	CONTRACT/RFP NO. NNA09DB39C	DRL DATE/MOD DATE June 9, 2009
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1. LINE ITEM NO.	2. DRL TITLE	3. FREQUENCY	4. SUBMISSION DATE	5. COPIES
15.	IT Security Plan	Once	See Remarks	See Distribution
6. DATA TYPE: <input checked="" type="checkbox"/> Scheduled submittal <input type="checkbox"/> Submittal upon request <input type="checkbox"/> Submitted upon update <input checked="" type="checkbox"/> Gov't Approval Required				
7. DISTRIBUTION CO, Code JAC, M/S 227-4 (1 cy electronic)  COTR; Code AO, M/S 227-4 (1 cy electronic)			8. REMARKS The Contractor shall prepare and submit an IT Security Plan for Government approval in accordance with NFS clause 1852.204-76 within 30 days after contract award. The Contractor shall submit to the CO and COTR any updates to this plan necessary during performance of this contract.	
16.	NASA Position Designation Record, NASA Form (NF) 1722	See Remarks	See Remarks	See Distribution
6. DATA TYPE: <input checked="" type="checkbox"/> Scheduled submittal <input type="checkbox"/> Submittal upon request <input type="checkbox"/> Submitted upon update <input type="checkbox"/> Gov't Approval Required				
7. DISTRIBUTION Reports may be sent electronically to: COTR; Code AO, M/S 227-4 (1 cy) CO, Code JAC, M/S: 227-4 (1 cy) Protective Services Office, Code JP (1 cy)			8. REMARKS In accordance with NPR 1600.1, NASA Security Program Procedural Requirement, the Contractor shall complete a NF 1722 for each employee and new hire. The NF 1722 shall completed within 10 working days from date of hiring.	
17.	Organizational Conflicts of Interest Avoidance Plan	See Remarks	See Remarks	See Distribution
6. DATA TYPE: <input checked="" type="checkbox"/> Scheduled submittal <input type="checkbox"/> Submittal upon request <input type="checkbox"/> Submitted upon update <input checked="" type="checkbox"/> Gov't Approval Required				
7. DISTRIBUTION CO, Code JAC, M/S 227-4 (1 cy electronic)  COTR; Code AO, M/S 227-4 (1 cy electronic)			8. REMARKS The Organizational Conflicts of Interest Avoidance Plan shall be provided by the contractor with submission of the proposal. This plan shall incorporate any previous studies performed, shall thoroughly analyze all organizational conflicts of interest that might arise because the service provider has access to companies' sensitive information and shall establish specific methods to control, mitigate, or eliminate all problems identified. The plan shall address all the requirements identified in Section H, paragraph H.12, Organizational Conflicts of Interest and Section I, paragraph I.1, NFS 1852.237-72, Access to Sensitive. The plan is required upon submission of proposal. The Contractor shall submit to the CO and COTR any updates to this plan necessary during performance of this contract and shall deliver a task order specific plan when required.	

CONTRACT DATA REQUIREMENTS LIST (CDRL)

TITLE OF CONTRACT, PRODUCT, SOW, ETC. Aerospace Testing and Facilities Operations and Maintenance (ATOM)	CONTRACT/RFP NO. NNA09DB39C	DRL DATE/MOD DATE June 9, 2009
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1. LINE ITEM NO.	2. DRL TITLE	3. FREQUENCY	4. SUBMISSION DATE	5. COPIES
18.	Quarterly Report of Purchases	See Remarks	See Remarks	See Distribution
6. DATA TYPE: <input checked="" type="checkbox"/> Scheduled submittal <input type="checkbox"/> Submittal upon request <input type="checkbox"/> Submitted upon update <input checked="" type="checkbox"/> Gov't Approval Required				
7. DISTRIBUTION CO, Code JAC, M/S 227-4 (1 cy electronic)  COTR; Code AO, M/S 227-4 (1 cy electronic)  Supply and Equipment Management Officer (SEMO), M/S 255-2 (1 cy electronic)			8. REMARKS The Contractor shall comply with the requirements of NFS 1852.245-71, INSTALLATION-ACCOUNTABLE GOVERNMENT PROPERTY (SEP 2007)(ALT 1)(DEVIATION)(SEP 2007). The Contractor shall submit the Quarterly Report of Purchases no later than 5 working days after the end of each quarter.	
19	2 <sup>nd</sup> /3 <sup>rd</sup> Shift Roster	See Remarks	See Remarks	See Distribution
6. DATA TYPE: <input checked="" type="checkbox"/> Scheduled submittal <input type="checkbox"/> Submittal upon request <input type="checkbox"/> Submitted upon update <input type="checkbox"/> Gov't Approval Required				
7. DISTRIBUTION CO Code JAC, M/S: 227-4 (1 cy) COTR; Code AO, M/S 227-4 (1 cy electronic)  Protective Services Office, Code JP, M/S 15-1 (1 cy)			8. REMARKS The Contractor shall provide the schedule/roster for its on-site 2nd and 3rd shifts, including employee names, locations, and scheduled work periods weekly on the first work day for that week.	
20	Individual Subcontracting Report (ISR) (formerly SF 294)	Semi-annually	See Remarks	See Distribution
6. DATA TYPE: <input checked="" type="checkbox"/> Scheduled submittal <input type="checkbox"/> Submittal upon request <input type="checkbox"/> Submitted upon update <input type="checkbox"/> Gov't Approval Required				
7. DISTRIBUTION Electronic submittal into the Electronic Subcontracting Reporting System (ESRS) at <a href="http://www.esrs.gov">http://www.esrs.gov</a>			8. REMARKS The Contractor shall electronically submit their Individual Subcontracting Report (ISR) (formerly SF 294) in accordance with the instructions provided at <a href="http://www.esrs.gov">http://www.esrs.gov</a> and in accordance with Section I, clause 52.219-9 <i>Small Business and Small Disadvantaged Business Subcontracting Plan</i> . The ISR is to be submitted semi-annually by 30 days after the reporting period (no later than April 30 and October 30 of each year).	



CONTRACT DATA REQUIREMENTS LIST (CDRL)

TITLE OF CONTRACT, PRODUCT, SOW, ETC. Aerospace Testing and Facilities Operations and Maintenance (ATOM)	CONTRACT/RFP NO. NNA09DB39C	DRL DATE/MOD DATE June 9, 2009
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1. LINE ITEM NO.	2. DRL TITLE	3. FREQUENCY	4. SUBMISSION DATE	5. COPIES
21	Summary Subcontracting Report (SSR) (formerly SF 295)	Annually	See Remarks	See Distribution
6. DATA TYPE: <input checked="" type="checkbox"/> Scheduled submittal <input type="checkbox"/> Submittal upon request <input type="checkbox"/> Submitted upon update <input type="checkbox"/> Gov't Approval Required				
7. DISTRIBUTION Electronic submittal into the Electronic Subcontracting Reporting System (ESRS) at <a href="http://www.esrs.gov">http://www.esrs.gov</a>			8. REMARKS The Contractor shall electronically submit their Summary Subcontracting Report (formerly SF 295) in accordance with the instructions provided at <a href="http://www.esrs.gov">http://www.esrs.gov</a> and in accordance with Section I, clause 52.219-9 <i>Small Business and Small Disadvantaged Business Subcontracting Plan</i> . The SSR is to be submitted annually no later than 30 days following the reporting period (no later than October 30 of each year).	
22	NASA Property in the Custody of Contractors (NF 1018)	Annually	See Remarks	See Distribution
6. DATA TYPE: <input checked="" type="checkbox"/> Scheduled submittal <input type="checkbox"/> Submittal upon request <input type="checkbox"/> Submitted upon update <input type="checkbox"/> Gov't Approval Required				
7. DISTRIBUTION Electronic submittal use the NF 1018 Electronic Submission System (NESS) for report preparation and submission at: <a href="https://ness.gsfc.nasa.gov/">https://ness.gsfc.nasa.gov/</a> .			8. REMARKS The Contractor shall submit annually a NASA Form (NF) 1018, NASA Property in the Custody of Contractors, in accordance with the provisions of NFS 1845.505-14, the instructions on the form, NFS subpart 1845.71, and any supplemental instructions for the current reporting period issued by NASA for property in the off-site possession of the contractor and/or any subcontractor.  The annual reporting period shall be from October 1 of each year through September 30 of the following year. The report shall be submitted in time to be received by October 15.	

CONTRACT DATA REQUIREMENTS LIST (CDRL)

TITLE OF CONTRACT, PRODUCT, SOW, ETC. Aerospace Testing and Facilities Operations and Maintenance (ATOM)	CONTRACT/RFP NO. NNA09DB39C	DRL DATE/MOD DATE June 9, 2009
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1. LINE ITEM NO. 23	2. DRL TITLE Conference-Related Expense Reporting	3. FREQUENCY Monthly	4. SUBMISSION DATE See Remarks	5. COPIES See Distribution
6. DATA TYPE: <input checked="" type="checkbox"/> Scheduled submittal <input type="checkbox"/> Submittal upon request <input type="checkbox"/> Submitted upon update <input type="checkbox"/> Gov't Approval Required				
7. DISTRIBUTION Electronic Submission to the CO			8. REMARKS Submission shall be no later than the 10th working day after end of accounting month being reported (in conjunction with the 533M).  Contractors shall not incur or commit to any conference related expense resulting from NASA Direction without prior written approval of the cognizant CO (after concurrence by the COTR). Contractor expenses for conferences that are not included in or necessary for the performance of a contract or task order, and are not incurred at NASA direction, are not subject to this approval.  Contractors shall report monthly, due on all funds expended or committed for conference attendance or support resulting from NASA direction.	
1. LINE ITEM NO. 24	2. DRL TITLE American Recovery and Reinvestment Act – Reporting Requirements	3. FREQUENCY Quarterly	4. SUBMISSION DATE See Remarks	5. COPIES See Distribution
6. DATA TYPE: <input checked="" type="checkbox"/> Scheduled submittal <input type="checkbox"/> Submittal upon request <input type="checkbox"/> Submitted upon update <input type="checkbox"/> Gov't Approval Required				
7. DISTRIBUTION Electronically as described in the remarks section. Email notification shall be sent to the CO once each submission is completed.			8. REMARKS Submission shall be in accordance with FAR clause 52.204-11. The clause requires contractors to utilize the tool at <a href="http://www.FederalReporting.gov">www.FederalReporting.gov</a> to report first-tier subcontracts, executive compensation, and jobs created or retained, work progress, and amount invoiced, among other things. The Federal Reporting website is publically available and the information reported by Federal contractors will serve to provide transparent information on the use and effectiveness of Recovery Act funds.	

## FACILITY DESCRIPTIONS

This attachment, J.1(a)11 describes facilities listed in the statement of work.

### TEST FACILITIES

#### UNITARY PLAN WIND TUNNEL FACILITY (UPWT)

The Unitary Plan Wind Tunnel Facility is comprised of three separate closed return wind tunnel circuits with individual test sections sharing a common power source and other auxiliary subsystems. The three research test sections are the 11-Foot TWT, the 9 x 7 Foot SWT, and the 8 x 7 Foot SWT. The facility also has Model Preparation Rooms used for buildup, calibration and checkout of models prior to wind tunnel test entry.

The three wind tunnels are unique in operating characteristics: the 11-Foot TWT has a Mach number range of 0.3 to 1.5, the Mach number range of the 9 x 7 Foot SWT is 1.5 to 2.5 and that of the 8 x 7 Foot SWT is 2.5 to 3.5. The tunnels are variable density with a total pressure range from approximately 10" to 60" Hg absolute. Only one test section can be utilized for wind tunnel testing at a time due to the sharing of a common main drive system. The airflow for the tunnels is provided by coupling the drive motors to one of the two axial flow compressors: a three-stage for the 11-Foot TWT; and an eleven-stage common to both the 9 x 7 Foot SWT and 8 x 7 Foot SWT (air flow diversion valves are used to select the 9 x 7 Foot SWT or 8 x 7 Foot SWT tunnels).

The Auxiliary Equipment is comprised of the equipment within the Unitary Plan Wind Tunnel Facility that is shared by all three wind tunnels. This includes the main drive motors and their couplings, the emergency electrical power, the Make-Up-Air (MUA) system, the lubrication systems for the motors and compressors, the diesel generator set, vacuum systems, instrument air system, and the main cooling water system. Controls for the shared systems are duplicated at each test section's control room and at control panels in the Auxiliary Equipment building. A key interlock system limits control to one control console at a time.

#### ARCJET COMPLEX

The Arcjet Complex is used for thermal protection systems evaluation, materials characterization, and design validation. Computer models can be used in conjunction with data provided by the Arcjet tests to predict the thermal performance of Thermal Protection Systems concepts in various flight trajectories. The facilities consist of five separate operational units: the Aerodynamic Heating Facility (AHF), the 2X9 in. Turbulent Flow Duct Facility, the 20-MW Panel Test Facility (PTF), the 60-MW Interaction Heating Facility (IHF), and the Direct Connect Arcjet Facility (DCAF). The Giant Planet Facility is currently being readied for reactivation. The arc-heated facilities are powered by either a 20-MW direct current power supply or a separate 60-MW dc power supply. The effluent gas stream discharges into five stage steam-ejector-driven vacuum system. All the facilities have high-pressure water available at flow rates up to 8000 gallons/min. The vacuum system, power supplies, and high-pressure water are common to test facilities in both Building N-234 and N-238.

## FACILITY DESCRIPTIONS

### HYPERVELOCITY FREE-FLIGHT FACILITY (HFFF)

The HFFF is an aeroballistic range used to measure aerodynamic and aerothermodynamic characteristics of small-scale models in free flight, at extremely high speeds (up to 8 km/s). It consists of three main sections: (1) an arsenal of model launching guns (light gas and powder), (2) a test section with receiver tank, and (3) a counterflow-producing shock tube (see below) with a variable area ratio nozzle. Testing can be conducted using the gun and test section only (standard aeroballistic or hypervelocity impact testing); or with the shock tube and test section (Mach 10 - 16, fixed-model, shock-tunnel testing); or with the gun, test section, and shock tube simultaneously (counterflow aeroballistic testing). In counterflow mode of operation, the HFFF is capable of producing relative velocities up to 11 km/sec. Note, the shock tube has been mothballed since 1995, and there are no immediate plans to reactivate this section of the facility. The facility can conduct tests (in all modes of testing) in atmospheres other than air (i.e. carbon dioxide, nitrogen, helium, xenon, krypton, argon, etc.), and at sub-atmospheric conditions.

Each of four available light-gas guns uses smokeless gunpowder to launch a plastic piston into a tube filled with hydrogen. The subsequent rapid compression process produces a reservoir of extremely high-pressure and high-temperature gas, which then acts upon the launch package (model and carrier) accelerating it down the gun barrel and into the test section at hypervelocity flight conditions. Variations in gun size enable launching models ranging in size from 7 mm to 38 mm in diameter.

The instrumented test section has a length of approximately 23 meters and diameter of roughly 1.07 meters, and contains 16 evenly spaced, orthogonal, imaging stations capable of producing 32 shadowgraph images (16 horizontal and 16 vertical). Each station is equipped with a pair of Kerr cell shutters (40 nanosecond exposure) and spark gap (capacitive discharge) light sources. Alternatively, visible ICCD and IR cameras can be substituted at any of the stations to obtain model surface temperature profile images at different points along a model's flight path. Aerodynamic coefficients are derived from the shadowgraph images and the corresponding recorded time history of the model flight. Aerothermal quantities such as heat transfer rates and transition to turbulent flow locations are obtained from thermal imagery data. The test section is serviced by four, mechanical vacuum pumps, and one Roots blower. Minimum pressure achievable is on the order of 40-microns of Hg (40 millitorr) absolute.

Although the Counter Flow Shock Tube has been mothballed for more than a decade, the following descriptive information is worth mentioning for completion purposes. The shock tube (combustion driven) is used to produce a hypervelocity slug of test gas within the test section that persists for several to tens of milliseconds in duration. The driver tube is 20 meters in length and 0.43 meters in diameter and was constructed from breech sections of 16-inch (406 mm) WW-II era naval cannons. The shock, or driven, tube is 26 meters long and 0.30 meters in diameter and was fabricated from 14-inch (356 mm) WW-I naval cannons. The shock tube is rated for a maximum operating pressure of 10,000 psi.

### ANECHOIC TEST CHAMBER/ACOUSTICS LABORATORY

The Anechoic Test Chamber is a specialized facility for acoustics measurements. The walls are treated with various attachments designed to reduce sound wave reflections. The chamber also contains a blower jet facility. The acoustics laboratory is used for instrumentation development, calibration and testing.

## FACILITY DESCRIPTIONS

### ELECTRIC ARC SHOCK TUBE (EAST)

The EAST is a unique facility featuring a capacitive electric-arc driver and the option of a 102 mm high-pressure driven tube or a 610 mm low-pressure driven tube. The facility is used for investigations such as radiation and ionization studies for outer planet entries, chemical reaction rate measurements, and diagnostics in high-energy flows requiring a high performance shock tube facility.

Shock velocities up to 40 km/sec can be attained with quick succession operation (3 - 5 tests per day) utilizing the conical arc chamber. Energy for the driver is supplied by a one megajoule capacitive storage system. It can be charged to a preset energy at either a 0 to 40 kV (1250 micro f) mode or a 0 to 20 kV mode (5000 micro f). The 102 mm high-pressure driven tube is 11 meters long and is designed for a 6000 psi working pressure. The 610 mm low-pressure driven tube is 21 meters long and designed for a working pressure of 200 psi. The facility has a variety of instrumentation with high speed oscilloscopes being the primary data recording devices, and is serviced by several vacuum pumps and a gas loading system for pressurizing the driver. The facility is operated through an automatic sequencer once the preliminary facility preparation is completed.

### AMES VERTICAL GUN RANGE (AVGR)

The AVGR is a unique ballistic facility used to simulate and study the physics and mechanics of planetary impact cratering phenomena. Ballistic technologies, utilizing light gas and gun powder, enable the acceleration of projectiles up to 2-centimeters diameter at relative velocities of approximately 8 km/sec. By varying the gun's angle of elevation with respect to the target vacuum tank, impact angles from 0 to 90 degrees with respect to the gravitational vector are possible.

Various photographic techniques are employed to document the experiments. The 16-mm movie cameras are capable of 104 frames per second and constitute the major means of recording. Additional capabilities include a framing camera (permitting 4,500,000 frames per second) and a pair of 35-mm framing cameras capable of recording movies in stereo at a mechanically synchronous rate of 60 frames per second. These recordings provide a highly accurate analytical growth history of the impact and cratering phenomena.

Experimental targets are contained within a 2.5 meter diameter vacuum chamber and can be accelerated vertically downward to change the net gravitational effect experienced by the target during crater formation. Variations of target construction include the placement of colored substrates to be used as markers prior to crater formation, thus providing information pertaining to the flow of subsurface materials.

### SENSOR DEVELOPMENT LABORATORY

The NASA Ames Research Center Thermophysics Facilities Branch Sensor Development Lab's mission is to design, develop, implement, manufacture, and deliver instrumentation related to the study of thermal protection systems and aerothermal environments. Consisting of a diverse team of engineers and technicians, the group has developed sensors to measure properties such as temperature, TPS recession, and heat flux. Among the programs that the Sensor Development Lab has supported include the Mars Science Laboratory Entry, Descent, and Landing Instrumentation (MEDLI) project, the Crew Exploration Vehicle Advanced Development Project (CEV ADP), and calorimetry support for the Ames Arc Jet Facilities. Instrumentation designed and manufactured by the Sensor Development Lab is scheduled to be launched with the Mars Science Laboratory arriving at Mars in 2010.

## FACILITY DESCRIPTIONS

### SUPPORT FACILITIES

#### STEAM VACUUM SYSTEM (SVS)

The SVS provides the high mass flow vacuum conditions required for the operation of the Arc-Jet wind tunnel facilities. The steam is produced by a natural gas fired boiler with a capacity of 250,000 pounds of steam per hour and SVS pumping is accomplished by five steam ejector stages. Other major components of the SVS are two cooling towers, an effluent-air pollution control system, and a 160,000 gallon de-ionized water system.

#### ARC JET AIR SYSTEM (AJAS)/High Pressure Air Distribution System (HPADS)

The AJAS consists of two parts: the air generation and storage subsystem and the High Pressure Air Distribution System (HPADS) network. The air generation and storage subsystem consists of four reciprocating compressors (from 900 HP to 5500 HP), three storage units (500,000 SCF to 6,000,000 SCF at 3000 psig), the interconnecting piping and valving, and all the associated pumps, heat-exchangers, water towers, motors, blowers, driers, etc. The high-pressure air distribution system network supplies air to twenty user facilities located throughout Ames Research Center. Three of the compressors are equipped with cylinders to evacuate five 75-foot diameter vacuum spheres for three user facilities.

#### HIGH VOLTAGE ELECTRICAL SYSTEMS

The High Voltage Electrical System consists of the power distribution equipment used to provide electricity to the aerospace test and support facilities.

#### BLADE INSPECTION/STORAGE FACILITY (BISF)

The Blade Inspection/Storage Facility, located in N207A, is used for the reconditioning of wind tunnel compressor blades after removal from a compressor and for the proper storage of the blades in preparation for reinstallation into a compressor. The facility houses the sanding equipment, balancing equipment, and storage of the wind tunnel compressor blades. The function of this facility is to restore/repair blades, balance them, and store them in preparation for use. Also, the maintenance of records for the blades is a function of this facility.

#### STING ASSEMBLY/STORAGE FACILITY (SASF)

Sting Assembly/Storage Facility, located in N207A, is used for the storage and assembly of stings prior to entry into wind tunnel test sections. The function of this facility is to store in functional condition the stings and adapters used in the wind tunnels and to assemble, document, and deliver functional assemblies to the test section. The facility inspects and repairs these components and maintains a database on all items in the facility.

#### BALANCE CALIBRATION LABORATORY (BALCAL)

The BCL performs calibrations on all types of strain gage balances used to measure forces on aerodynamic models installed in the test facilities. The BCL is equipped with two semi-automatic calibration machines, hand load rigs to calibrate unusual configurations, and data acquisition/reduction computers. The outputs of the facility are the gage constants and interactions that are used in a wind tunnel test to reduce the measured gage output to engineering units of force and moment.

## **FACILITY DESCRIPTIONS**

### **INDUSTRIAL WASTEWATER TREATMENT FACILITY**

The Industrial Wastewater Treatment Facility (IWTF), N271, provides microfiltration and reverse osmosis treatment of industrial wastewater effluent from the Unitary cooling tower, the ArcJet cooling tower, and the ArcJet boiler. Treated groundwater is also processed through N271. The treated waters are then reused as make-up water for the ArcJet boiler. The IWTF is operated primarily by the Thermophysics Facilities Branch (Code TSF).

## **ANTICIPATED TEST FACILITIES**

### **LUNAR ENVIRONMENT ARCJET FACILITY (LEAF)**

The Lunar Environment Arcjet Facility (LEAF) will be a new ground test facility specifically designed to simulate the peak aero-thermal heating environments that the Orion vehicle will encounter during Earth atmospheric entry from a lunar direct return (LDR) trajectory, (the most severe trajectory anticipated in terms of aerodynamic heating to the heat shield). The LEAF will consist of a new electric-arc gas heater, a new vacuum test chamber, and a new high-power radiant heat source, and it will use the existing supporting subsystems in the Ames arc jet complex. A major risk to the Orion project is the uncertainty in thermal protection system (TPS) performance during the aerodynamic heating of Earth atmospheric entry: how well will the heat shield material protect the craft and its crew during the fiery reentry? The main purpose of the new LEAF arc jet facility will be to perform tests on heat shield material samples at much higher heating conditions than any current arc jet facility can provide today. Material samples will incorporate gaps/seams that are similar to the flight vehicle, and will incorporate assemblies of materials built to flight-like thickness to better understand their response to the intense heating environment. The LEAF materials tests will produce data on TPS performance that will not only lead to a reduction of the risks to the Orion program, but will provide the necessary data to qualify and certify the design of the heat shield. The LEAF support systems (power, cooling water, vacuum, etc) will be shared with three other operational arc jets at Ames, and must be compatible. It is anticipated that LEAF will use nearly all of the available power capacity of the arc jet rectifier power supply, or approximately 75 MW.

**SURVEILLANCE AND  
INCENTIVE FEE PLAN**

January 30, 2009

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1.0 OVERVIEW

The Contractor's performance for Aerospace Testing and Facilities Operations and Maintenance (ATOM), in accordance with Section C, Statement of Work (SOW), will be evaluated using this Surveillance and Performance Incentive Fee Plan. The evaluation criteria and incentive fee structure are outlined below.

1.1 GENERAL SURVEILLANCE:

The COTR will recommend an Alternate COTR to serve on behalf of the COTR whenever the COTR is unavailable to perform his/her duties.

The COTR will appoint Contract Technical Evaluators (CTEs) to serve as the COTR's technical experts with the responsibility for providing technical clarification when necessary on specific tasks delineated in the contract. The COTR will meet with appropriate CTEs as technical milestones are achieved or at periodic intervals to evaluate and assess the Contractor's performance and compliance with the contract.

The COTR, with assistance from the CTEs, review all material purchase requests issued by the contractor for appropriateness and to assure that the interests of the Government are maintained and that only task-specific procurements are made.

The COTR will conduct weekly meetings with the Contractor to review progress, plans, and problems or issues related to all tasks delineated in the contract.

The COTR will periodically hold meetings with the Contracting Officer to assess the performance of the contract and to resolve any problems/issues.



## 1.2 EVALUATION OVERVIEW

This contract is performance based and will utilize various methods to calculate fee based upon the defined acceptable quality levels for the performance of this contract. Tools used for assessing and determining Contractor performance and fee include negotiated Contract Task Orders (CTOs), the Contractor's Financial Management Report (NF 533M and NF 533Q), Required Monthly Technical Progress Reports, and this plan. The Cost Incentive fee is 25% of the total estimated fee (see 2.1 below). Performance Incentive is 75% of the total estimated fee (see 2.2 below).

## 2.0 EARNED COST AND PERFORMANCE INCENTIVE FEES

Both the cost and performance incentive fees will be evaluated, earned, and paid at the conclusion of CTOs. In accordance with NFS 1815.207-70 (b) (1), the Government will perform an analysis to determine whether the exercise of any option is in the Government's best interest. Therefore, the evaluation of the cost and performance incentive fees will also be used in the determination to exercise options.

Provisional performance incentive fee payments, pending the determination of the amount of performance incentive fee earned, will be paid to the Contractor on a monthly basis in accordance with Section G Clause G.10 *Incentive Fee Process* paragraph (e)(4).

### 2.1 COST INCENTIVE MEASUREMENT (25% of Total Estimated Fee).

Contract Task Orders (CTOs) will be negotiated and issued to obtain, describe, and quantify the services required by NASA and also to establish incentives for the Contractor to potentially earn. Cost Incentive fee for this contract is used to reward the Contractor's cost performance on CTOs.

A minimum performance incentive fee score of 85 is required in order to earn Cost Incentive Fee above the minimum. The Cost Incentive Fee process is described in clause G.10, *Incentive Fee Process*, of the contract. Clause B.6, *Estimated Cost and Fees*, delineates the Target (Tgt), Minimum (Min), and Maximum (Max) fee percentages and the share ratios for determination of Cost Incentive Fee.

### 2.2 PERFORMANCE INCENTIVE MEASUREMENT (75% of Total Estimated Fee).

Performance Incentive Fee will be weighted and distributed as described in Appendix A of this document. The Government may issue a contract modification to revise areas of this plan prior to the start of any CTO. In addition, CTO-specific performance metrics will be included in the negotiation of project CTOs.

Fee for performance of a listed performance area is earned and paid at the fee percentages indicated within the areas below.

The Contractor shall submit Monthly Technical Progress Reports in accordance with Contract Data Requirement List number J.1(a)2. The reported items shall include the status of the standards of performance outlined below, and a corrective action plan for resolution of issues.

Not all efforts under this contract are included in the performance incentive fee; however, lack of inclusion in no way relieves the Contractor of the obligation to perform all delineated tasks as defined in the SOW and Contract Task Orders (CTOs). Due to the dynamic nature of the testing environment, customer commitments, and changing priorities, performance area requirements and metrics for 15 percent of the available performance incentive fee will be negotiated prior to the start of each CTO by the CO, COTR, and Contractor with signed agreement documented.

The COTR will review and validate the information provided in the Monthly Technical Progress Report. The technical evaluators will be responsible for reporting any discrepancies to the COTR. The Contracting Officer (CO), with the support of the Contracting Officer's Technical Representative (COTR), will review the report, along with other evaluation criteria stated herein, and determine if there were any actions by the Government, or any other mitigating circumstances, that should be considered in the performance incentive fee evaluation.

Performance area requirements and their respective weights are described below with their evaluation criteria included on Appendix A.

2.2.1 CUSTOMER SATISFACTION (25% of Available Performance Incentive Fee)

At the conclusion of each test program, the test facility organizations distribute a comprehensive questionnaire to the test customer representatives to obtain data in order to assess overall performance and determine areas needing improvement. For the purposes of the performance incentive fee evaluation, each test program will have an equal weighting into the overall Customer Satisfaction area, and will be used for twenty-five (25) percent of the available performance incentive fee.

The Test Customer satisfaction rating will be based on the attributes reflected in the Post Test User Survey received for the ArcJet Complex and Wind Tunnels. The survey instrument is fairly mature and consistent between facilities. Respondents may score any attribute "0" if they feel it is not observed or applicable for any model preparations, pre-test, operations, or post-test period or other area of effort they are evaluating. Possible scores are:

6	Strongly agree
5	Agree
4	Somewhat agree
3	Somewhat disagree
2	Disagree
1	Strongly disagree
0	Not observed or not applicable

The COTR will obtain copies of all Post Test User Survey forms. The ratings will be converted to a 0 to 100 per cent score for each survey form and the scored ratings will be averaged for each test program. The average of the resultant average test program score for tests completed during the performance period will be used as the basis of the performance incentive fee in accordance with Appendix A of this document. Specific comments or suggestions for performance improvement will be discussed with the Contractor by the COTR and Contracting Officer after each assessment.

### 2.2.2 SAFETY, ENVIRONMENTAL, AND MISSION ASSURANCE (25% of Available Performance Incentive Fee)

Safety is an integral factor in the operation of the facilities. The Contractor will receive performance incentive fee based on the overall safety performance within the facility's services required by this contract. The COTR will obtain data concerning Safety, Environmental Compliance, and Mission Assurance based on the information submitted by the Contractor's Monthly Accident Report (CMAR) as well as, internal and external compliance inspections based on federal/state/local safety and environmental regulations, and completed safety training. The COTR will also conduct a survey to collect information from CTEs, and facility, test, and organization managers. The cumulative average rating from these surveys will be the basis for establishing the performance incentive fee for this area.

### 2.2.3 FACILITY UTILIZATION (25% of Available Performance Incentive Fee)

Facility Utilization is directly affected by: business development efforts; test planning, preparation, and execution; as well as facility maintenance, repairs, and calibration. The Contractor will receive performance incentive fee based on the overall facility utilization of the facility's services required by this contract. The COTR will obtain data concerning facility utilization from survey responses from CTEs, and facility, test and organizational managers. The cumulative average rating from these surveys will be the basis for establishing the performance incentive fee for his area.

### 2.2.4 ADMINISTRATION (10% of Available Performance Incentive Fee)

Administration includes achievement of contractual Small Business goals; accuracy and timeliness of NF533 Contractor Financial Management Report; documentation of, and adherence to applicable regulations and the Contractor's procurement processes.

### 3.0 NEGOTIATED FOCUS AREAS - EXAMPLES (15% of Total Performance Incentive Fee)

This area is to be negotiated prior to the start of an evaluation period and will delineate those issues that the organization(s), CO, COTR, and Contractor determine are important to focus on during the coming period. The actual portion of the performance incentive fee for this area will be determined by the number of focus issues or areas that are agreed upon by the CO, COTR, and Contractor.

Possible areas include: contract initiatives to improve safety, business development and contract management; initiatives undertaken by the contractor to improve testing services; investments and initiatives undertaken by the contractor for improvements in the non-test direct services such as maintenance, facility improvements, and other support services; activation activities for the anticipated Lunar Environment Arcjet Facility (LEAF) test facility – or other new/reactivated facilities – that are not covered under other Performance Incentive Fee areas.

APPENDIX A: PERFORMANCE INCENTIVE FEE					
Performance Area (% of available PERFORMANCE fee)	FOCUS	% within Area	Acceptable Quality Level (METRICS)		Surveillance Method & (Frequency)
2.2.1 Customer Satisfaction (25%)	Post Test User Review Reports	25%	<b>Equivalent Survey Average Score</b>	<b>Portion of Fee for this Area</b>	Completed Post Test User Review Reports (averaged over the number of months in CTO period)
			Max -100	100%	
			60-99	Portion equivalent to score (e.g., score=70%, portion of fee=70%)	
			Min <60	0%	
2.2.2 Safety, Environmental Compliance and Mission Assurance (25%)	Safety & Environmental (S/E) Compliance	25%	<b>Average Survey Score</b>	<b>Portion of Fee for this Area</b>	COTR Survey of CTE's to review: - Lost time and Reportable Injury rate versus industry standards - Incidents/close calls – IRIS - Results from internal and external Compliance Audit - Assessment of compliance with Contractor's safety plan and program s
			Max – 100	100%	
			60-99	Portion equivalent to score (e.g., score=70%, portion of fee=70%)	
			Min <60	0%	
2.2.3 Facility Utilization (25%)	Facility Utilization	25%	<b>Average Survey Score</b>	<b>Portion of Fee for this Area</b>	COTR Survey of CTE's to review: - Actual versus Targeted Utilization - Facility Reliability - Completion of Preventive & Programmed Maintenance and Calibrations
			Max – 100	100%	
			60-99	Portion equivalent to score (e.g., score=70%, portion of fee=70%)	
			Min <60	0%	

2.2.4 Administrative (10%)	Procurement, including adherence to processes and Small Business (SB) Goals Compliance	5%	<b>Average Score</b>	<b>Portion of Fee for this Area</b>	Consent Package review and/or CO review of subcontract processes and documentation; review of progress towards subcontract goals in monthly technical progress report; and annual eSRS submittal	
			Max – 100	100		
			60-99	Portion equivalent to score (e.g., score=70%, portion of fee=70%)		
	Min <60	0%				
	Contractor Financial Management Reports	5%	<b>Accuracy / Timeliness</b>	<b>Portion of Fee for this Area</b>		Monthly and Quarterly NF 533; variance analysis
			Max – Accurate;	100%		
			Variance Analysis if required per CDRL on or before due date			
Min - Inaccurate			0%			
No Variance Analysis						
Later than required SAP Input						
3. *Negotiated Focus Areas (15%)	TO BE NEGOTIATED PRIOR TO START OF EVALUATION PERIOD *If no Focus Areas within a period, the 15% will be equally allocated to areas 2.2.1, 2.2.2, and 2.2.3					

APPENDIX B: INCENTIVE FEE CALCULATION

B.6: Maximum fee rate (%) proposed by Offeror.  
B.6 Sharing Ratio (Government/Contractor):  
Underrun = 60/40  
Overrun = 50/50

G.10 Ratio of Cost and Performance Maximum per Incentive Fee CTO is 25% Cost, 75% Performance Incentive Fee  
G.10(b) Target Cost Incentive Fee is 50% of Maximum Cost Incentive Fee  
G.10(b) There is no Target Performance Incentive Fee.

CTO is issued with a Target Cost  
Fees are based on the contract maximum fee rate (%) proposed by the Offeror

Total Maximum Incentive Fee = Target Cost x Contract Maximum Fee Rate

Maximum Cost Incentive Fee = 25% x Total Max Incentive Fee calculated above  
Target Cost Incentive Fee = 50% x Maximum Cost Incentive Fee

Max Performance Incentive Fee = 75% x Total Max Incentive Fee

Earned Cost Incentive Fee ranges from \$0 to Maximum Cost Incentive Fee, depending if over or under run.

Earned Performance Incentive Fee ranges from \$0 to Maximum Performance Incentive Fee, based on Appendix A score