Langley Research Center

Research and Development Classification Process (RDCP) Panel Training

May 2004

Why Peer Review?

- OPM recommends peer review in Research Grade Evaluation Guide (RGEG) and Equipment Development Grade Evaluation Guide (EDGEG) to evaluate impact and contribution
- Includes person-in-the-job concept - evaluation of career contributions and impact of research
- Alignment of covered employees into peer groups with similar areas of expertise
- Consensus decisions of peers on application of grade level criteria reduced to written report which yields feedback to the researcher and supervisor

Coverage

- Majority of R&T non-supervisory research and development positions covered by RDCP evaluated under RGEG
- Evaluation criteria in RGEG and EDGEG Part III virtually identical
- Two panels use various EDGEG Part I and Part II of EDGEG
- Each panel reviews employees from one peer group
- Panels delegated authority to determine coverage under identified guide and appropriate grade level
  - For the majority of the job duties

Twelve Peer Groups: Total approximately 770 ASTs, GS-13s, 14s, and 15s

Aerodynamics and Acoustics (AAAC) {RGEG and EDGEG part 3}

Aerospace Systems Analysis (ASCAC) {RGEG and EDGEG part 3}

Aerothermodynamics and Hypersonic Air-breathing Propulsion (AAAC) {RGEG and EDGEG part 3}

Atmospheric/Space Science (AtSC) {RGEG and EDGEG part 3}

Computational Methods (ASCAC) {RGEG and EDGEG part 3}

Computer Science/Engineering (SEC) {EDGEG part 1 and part 2}

Crew Systems, Aviation Ops, Mission Critical (ASC) {RGEG and EDGEG part 3}

Dynamics and Control (ASC) {RGEG and EDGEG part 3}

Flight Instrumentation Research (SEC) {RGEG and EDGEG part 3}

Research Systems (SEC) {EDGEG part 1 and part 2}

Sensors, Instrumentation, and Measurement (SMC) {RGEG and EDGEG part 3}

Structural Mechanics and Advanced Materials (SMC) {RGEG and EDGEG part 3}

Lead Competency Directors identified in parentheses

Guide(s) used identified in brackets

Peer Groups being reviewed in Session 8 in blue type

RDCP Information and Contacts

- RDCP Manager -
  - Dr. Kelli Willshire, 864-1965, Kelli.F.Willshire@nasa.gov
- OHR-RDCP Information Website
  - http://ohr.larc.nasa.gov/rdcp
- RDCP Operation/document Website
  - http://rdcp.larc.nasa.gov/login.cfm
  - Information will be sent to you about this site
- More information about RDCP also in LMS CP-0019 and the RDCP Guidance document found at http://lms-p.larc.nasa.gov/
- Time & Attendance FCS is 23-090-20-52

Confidentiality and Non-disclosure

- Began in Session 2 - Names of panel Chairs and members are not being disclosed
- Contents of In-depth Reviews and panel deliberations are confidential - advise contacts that process is confidential
- Panel report is the official document which records the final determination of the panel
- Copies of cases, notes, worksheets, and other pre-decisional materials will be collected at the end of the meeting and destroyed by end of the next session. Panel members must delete any electronic files.
- May discuss general views about panel processes and case write-ups
- May **NOT** release results of panel decisions to anyone, even Branch Heads. Results come from RDCP manager.
- You signed or will sign Form 516 to acknowledge your understanding of this policy. Provides privacy for you and the reviewee.

Liability and Panel Service

- Employee right to request review of panel decisions built in RDCP
- Informal right within Center - decision issued within 60 days
- Formal right of appeal to NASA HQ and OPM
- Classification appeals -
  - Non-adversarial - no hearings, witnesses, etc.
  - Usually involve review of written package
  - Panel report is the official record of the panel's determination

Liability and Panel Service II

- EEO complaint could be filed
- At administrative level, panel members could be asked to give statements/testify in hearings
- Such actions can result in litigation
- Panel service is an official assignment - acting within scope of employment
- If named as an individual, generally insulated from litigation - Department of Justice will represent employee and move for individual to be dismissed from the lawsuit
- Potential liability is limited

RDCP and Job Classification

- RDCP is a system designed to ensure that all employees in covered positions have accurately described and properly classified p.d.'s
- Job classification focuses on application of a guide or standard to the regular and recurring work of a position
  - Evaluates the work and contributions relative to Guide criteria
  - Is NOT performance evaluation or reward system
- Classification does not consider personality and relationships except where there is a demonstrated impact on the level of achievement
- Ability to communicate effectively in writing is an appropriate consideration in judging against the guide

Preparation for the Panel Meeting

Panel Chairs

- Panel Chair is responsible to ensure that panel taskings are met
  - Checks on progress with panel members periodically
  - Makes sure in-depth reviews and all evaluations are done before the deliberation meeting
- Conducts Kick-off Meeting
  - Chair assigns In-depth Reviewers - preferably someone from different branch than reviewee
  - Sets panel deliberation meeting dates
  - With the RDCP Manager and OHR rep, reviews how to conduct the evaluations and addresses any concerns
- Chair leads the group to consensus in deliberation meeting
- Procedural questions may be addressed to Chair, OHR representative on the panel, or RDCP Manager

Preliminary Work

- Panel members download case write-ups from website: http://rdcp.larc.nasa.gov/login.cfm
- Chair, panel members, and OHR representative read and scores all packages assigned to the panel prior to the meeting
  - Score Sheet (optional) used by all except the IDR
  - Direct any questions you have about reviewee to the IDR. That should be the only person making inquiries.
- IDR completes more detailed review and drafts evaluation on Position Evaluation Report
- Do not contact the employee being reviewed
- IDR may request work products from employee's Branch Head

Report Format

- Score Sheet – optional
  - One page
  - Space for scoring all factors and tallying overall score
  - Space provided for comments
- Electronic version available on RDCP website at http://ohr.larc.nasa.gov/rdcp

RESEARCHER SCORE SHEET

RESEARCHER _____

FACTORS	DEGREE LEVEL	SCORE
I RESEARCH ASSIGNMENT	_____	_____
II SUPERVISION RECEIVED	_____	_____
III GUIDELINES AND ORIGINALITY	_____	_____
IV QUALIFICATIONS AND CONTRIBUTIONS	_____	_____

TOTAL POINTS _____

GRADE CONVERSION _____

COMMENTS (Optional)

Report Format

- IDR uses Position Evaluation Report
- Two pages but fields can expand
  - Provides space for rationale for each factor score
  - Provides space for general comments
  - Write as many notes as you wish here - easier to edit out than to type in.
  - Serves as the draft of the final panel report, but explains why IDR gave his/her scores.
- Electronic version available on RDCP website at http://ohr.larc.nasa.gov/RDCP.html

RGEG Position Evaluation Report

Researcher:

Peer Group: _____
Previously classified as grade:

Summary Scores

Factor I – Research Assignment	Factor II – Supervision Received	Factor III – Guidelines and Originality	Factor IV – Qualifications and Contributions

Total Score: _____ **Grade Conversion: _____**

Factor I – Research Assignment

Important considerations in evaluating this factor:

- q Current research assignment(s) and/or what the employee will be doing for the foreseeable future and the role of the researcher in that effort is clearly explained.
- q Impact of the research assignment(s) and/or significance of the activity are outlined.
- q Leadership activities are specifically explained in terms of nature of the project/activity, membership of the team, degree of oversight, and responsibility for results.
- q Significant administrative or related functions (more than 25% of researcher's time) are present.

The panel assigned Degree _____ for this factor because:

Factor II – Supervision Received

Important considerations in evaluating this factor:

- q What degree of freedom does the incumbent have to make decisions, affect the course of the research, commit the organization to specific actions, etc?
- q To whom is the employee able to make such commitments?
- q What type/level of technical guidance is received? How are technical results reviewed?
- q What level of supervision is there on choice and direction of research?

The panel assigned Degree _____ for this factor because:

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Factor III – Guidelines and Originality

Important considerations in evaluating this factor:

- What literature/information is available and how closely is it relevant to the assignment?
- What degree of originality is required to make progress in this area?
- Are there examples of a demonstrated level of originality?

The panel assigned Degree _____for this factor because:

Factor IV – Qualifications and Contributions

Important considerations in evaluating this factor:

- Significant accomplishments are: (provide context for following points)
- Recency of accomplishment(s).
- Level of recognition for research contributions: local/regional, national, international.
- Stature/recognition is reflected in work products, mentorships, role as advisor/consultant, awards and honors.

The panel assigned Degree _____for this factor because:

General comments:

What feedback will the researcher and his/her Branch Head need to understand the thinking of the panel on any items of significance beyond the information contained with the factor scores included above?

EDGEG Part I Position Evaluation Report

Employee:

Peer Group: _____
Previously classified as grade:

Summary Scores

Factor I –Assignment Characteristics	Factor II – Level of Responsibility

Grade Conversion:_____

Factor I – Assignment Characteristics
The panel assigned Grade _____for this factor because:

Factor II – Level of Responsibility
The panel assigned Grade_____for this factor because:

General comments:
What feedback will the employee and his/her Branch Head need to understand the thinking of the panel on any items of significance beyond the information contained with the factor scores included above?

EDGEG Part II Position Evaluation Report

Employee:

Peer Group: _____
Previously classified as grade:

Summary Scores

Factor I – Scope of Assignment	Factor II – Technical Complexity of the Assignment	Factor III – Responsibility and Authority	Factor IV – Technical and Managerial Demands

Total Score: _____ **Grade Conversion:** _____

Factor I – Scope of Assignment
The panel assigned Degree _____for this factor because:

Factor II – Technical Complexity of the Assignment
The panel assigned Degree _____for this factor because:
Factor III – Responsibility and Authority
The panel assigned Degree _____for this factor because:

Factor IV – Technical and Managerial Demands
The panel assigned Degree _____for this factor because:

In-Depth Reviewer

- Is a fact-finder and investigator
- Is a confirmer of facts and their significance
- Must be unbiased . . . Neither advocate nor prosecutor
- Not necessarily a subject-matter expert in the specific area of research
  - Task is get the necessary information to answer the questions needed to apply the criteria in the guide
- In-Depth Review fleshes out the information in the case write-up
  - Panels are not empowered to rewrite packages

In-Depth Review

- Role –
  - Clarify/obtain information about –
    - » Accomplishments
    - » Impact
    - » Stature
    - » Individual contributions in team research activity
- Significance
  - Panelist's thoroughness has a direct bearing on quality of panel decision

In-Depth Review - Plan of Action

- Read case write-up
- Compare to RGEG/EDGEG criteria
- Develop questions regarding issues that need to be fleshed out
- Select and e-mail references or contacts to set up time to talk - links to contact sheet
- Interview supervisor and references

In-Depth Review - Contacts

- Employee provides minimum of six and maximum of ten names
- IDR has four mandatory contacts
  - Supervisor –
  - Three individuals from employee's contact list
    - » Talk to at least one outside LaRC person if listed
- May contact more names on employee's list
- May develop new leads
- Employee may link accomplishments to names on contact sheet
- Keep contacting until you have enough information to apply the criteria to the case write-up

In-Depth Review - Questions

- Ask open questions that require narrative response
- Don't ask:
  - Leading questions - Don't you really think that this area has been fully exploited?
  - Questions with only yes/no answers - Do you believe that the level of supervision described is truly the way that this researcher operates?
- Do say:
  - How do you view . . .
  - Can you give me an example of . . .
  - What is your opinion on . . .
- Don't let them get away with not answering!
- Don't ask:
  - Should this person be promoted?
  - Is the researcher doing GS-__ work?
  - How does the researcher get along with co-workers?
- Don't say:
  - I don't have much time
  - I don't know much about this person's work

List of Questions to use to check completeness of package

Assignment

5. Is the current assignment clearly explained?
6. Is the individual's role in that effort clearly explained?
7. What is the significance of the activity relative to the Agency or National needs?
8. How does the personal assignment tie back to the mission and function of the organization?
9. Are the development of industry standards or guidelines a part of this assignment? If so, what specific standards are involved? What specific and ongoing role is required (i.e., how do they influence the standard)?
10. To what extent, in this role, does end-product validation (and the associated processes) play?
11. To what extent, in this role, does the necessity for conversion of abstract concepts to software, hardware and/or easily understood statements of theory play?
12. As a team member, what specific part of the activity is the scientist or engineer's responsibility?
13. Is the Leadership activity specifically explained in terms of the project/activity?
14. Is the Leadership activity specifically explained in terms of the membership of the team?
15. Is the Leadership activity specifically explained in terms of the degree of oversight and responsibility for results?
16. If this is primarily a Leadership position, what personal research does the team leader do?
17. In a Leadership activity, how does the Team leader do the following: select and assign problem segments; define objectives; organize, plan, and evaluate team research; report the team's research?

Supervision Received

1. How much freedom does the incumbent have to make decisions and how does this affect the course of the research?
2. Can the incumbent commit the organization to specific actions? What are they?
3. To whom is the employee able to make such commitments?
4. What type/level of technical guidance does by the employee receive or does the employee give it to others? If the latter, who?
5. How are technical results reviewed?
6. What is the level and what are the impacts of the person's technical authority?

Guidelines and Originality

1. How much original and independent work is required and is being applied in this position relating to the following: analysis and reasoning; evaluating and judging; choosing between alternative methodologies
2. How much original and independent work is required and is being applied in this position relating to the interpretation of findings regarding the following: translation of findings into a problem solution; recording of these findings and interpretations in a form usable by others; recording of these findings and interpretations in a form specific to end-products.
3. What is the required significance or impact of original and independent work relating to theories, principles, concepts, techniques, and approaches developed by the incumbent upon the scientific field of his research effort?
4. Relating to originality, what literature or information is available and how closely is it relevant to the assignment?
5. What degree of originality is required to make progress in this area?
6. What are the examples of a demonstrated level of originality…i.e., given the above, "show me."

Qualifications and Contributions

For each identified activity -

5. What is the accomplishment? Specifically, what was made - a new principle, concept, idea, discovery, etc.? What was accomplished - an extension, clarification, validation, or substantiation of a principle, concept, technique, etc.?
6. What is the significance of the accomplishment (how did it add to scientific or engineering knowledge or meeting a customer's needs)? Describe the impact of theories, principles, concepts, techniques, or approaches developed by the employee upon customers and funders and the field of his/her work efforts.
7. What is the individual's role in the accomplishment?
8. What are the examples of a demonstrated level of originality (i.e., given the above, "show me")?
9. How was the accomplishment communicated to users (tech transfer, formal paper)?
10. To what extent have the findings been applied (where and by whom; identify major users by name, titles, organizations)?
11. What recognition has been received for the accomplishment (local/regional, national, international)?

For each team leadership activity (not already covered above) –

1. What were the major accomplishments of the team (its significance and impact)?
2. What specifically was the role of the employee in achieving these results as leader of the team (the nature of the employee's contribution in leading, planning, conducting, reviewing, and coordinating the work)?
3. Managerial effectiveness in leading a team can be demonstrated by documenting (an increased) rate of project completion, technical consultation, or journal publication of the team's, before when applicable and, after the employee's leadership.

Professional Scientific/Engineering/Technical Service –

1. What are the current memberships in professional societies (list organizations and include elective offices held and significant committee assignments; give dates)?
2. Rendering scientific or engineering judgment: Has the individual participated in the review of journal articles and conference papers, external review panels, editorial boards, and editorships?
3. In rendering scientific or engineering judgment, what was the position of the employee (chairperson, subcommittee chairperson, member, observer, expert consultant, etc.)?
4. In rendering scientific or engineering judgment, how significant was this individual's participation (internal, regional, national, and international)?

In-Depth Review - Plan of Action II

- Prepare draft evaluation report
  - Provide additional notes
  - Specify who was contacted
  - Share information they provided
- E-mail draft report to panel chair and OHR rep prior to deliberation meeting
- Bring enough copies to panel meeting for every member plus two
- Present your report and summarize your evaluation at the meeting

Panel Meeting

Panel Meeting Agenda

- One to three days set aside for meetings
- Chair identifies order in which cases to be discussed
- All members provide their scores on each factor and the summary
- IDR provides draft evaluation
  - Discusses results of contacts
  - Summarizes observations about write-up
  - Explains rationale for degree values initially assigned
- General discussion
  - Opportunity for members to adjust initial scores
  - Do not discuss current grade level

Panel Meeting Agenda (cont'd)

- If no consensus, Chair leads discussion to reach agreement
- Once consensus reached, final scores/grade level conversion/comments recorded - final panel report prepared
  - Difficult case could be tabled until the end of the meeting
  - Allows time for phone calls if needed to resolve unanswered questions
- Repeat for remaining cases
- Review all cases at end for consistency

Panel Options

- **Classify at appropriate Grade - assign a grade level**
  - **Results fall into these categories:**
    - Above Current Grade
    - At Current Grade
    - Below Current Grade
    - Borderline Grade
  - Can also recommend for **Early Review** if progress significant within 12 months.
  - Can also recommend for **ST Pool Referral** if get appropriate score

Borderline Cases

- Review assignment of points to Factors I through IV
- Ensure that appropriate credit has been given
- If strength warrants a higher score in one factor, will reach floor of next higher grade
- Score in the “gap” is a legitimate score
  - Person stays at current grade level, but panel report notes that score is between grades
  - Person must score within range of the grade points to receive that grade.
  - Higher grade must be based on minimum shown in Guide or _6 under RGEG

Policy for Below Grade Cases

- **Grade**
  - » Stay at current grade, but denote in panel report that score is below current grade.
  - » Report issued same time as all others using the web system
- **Follow up**
  - » RDCP manager sends e-mail to Branch Head, with copy to Comp. Office, to make sure he or she realizes the implications of a below grade score and refers him/her to the appropriate section in the RDCP Handbook.
    - If no appeal, this e-mail is sent after 30-day appeal period.
    - If there is an appeal, wait until results are complete. Send e-mail if panel decision upheld.
  - » Handbook contains revised section explaining that OHR how will work with Branch Head to resolve issues. OHR sends a letter (after appeal, if any, is complete) to say that some action needs to take place and a meeting is set up to decide that action.
- **Re-Review**
  - » Mandatory re-review in 12-18 months after resolution plan completed. Not a wild card. Won't displace people originally assigned to that session.
  - » If below grade score occurs for two consecutive reviews, case goes to OHR for other action.

ST Pool Referral

- ST – Pay plan for “Specially Qualified Scientific and Professional Personnel”
- Purpose of ST referral pool – highly qualified candidates to be considered for possible referral for future vacancies
- Current GS-15’s may meet criteria for referral to ST pool
- Criteria
  - Total score of 52 points under RGEG
    - » At least Degree E on each factor
  - Degree E on both factors of EDGEG, Part I
  - Total score of at least 38 under EDGEG, Part II
  - Total score of at least 29 under EDGEG, Part III

Decisions on Case Write-ups

- Consensus Decision Process
  - Seek consensus decision (unanimity) through panel dialog
  - Full agreement on grade, factor ratings, and comments
- Must reach a decision on every case

Panel Options (cont'd)

- **Split Decision** – majority and minority evaluations referred to employee's Competency Director and OHR for final classification - include factor scores, summary score and grade conversion
  - Decision issued within 90 days
- **Guide Not Applicable** - case write-up returned to Branch Head
  - OHR assists Branch Head in resolving, usually a desk audit
  - New classification required within 90 days
- **Insufficient Information** – evaluation returned to Branch Head/Employee with recommendation that identified discrepancies/deficiencies be corrected and resubmitted
  - Must be rewritten and resubmitted to next available panel

Final Panel Report

- Derived from initial work of In-Depth Reviewer who has prepared Position Evaluation Report
- Report form cues important considerations in each factor and provides space for scores/comments – also refer to questions in Appendix C of RDCP Guidance document.
- Final scores and narrative comments recorded at the meeting - rationale for scores assigned
- Report edited and agreed to by the panel during the meeting
- Chair finalizes evaluation report with check by RDCP manager and OHR representative.
- Report returned to Branch Head to discuss with employee

Good Panel Reports

- Explain the rationale of how degree assigned for each factor
- Any information provided by the IDR/panel that was critical in determining a level assignment that is not covered in the case write-up is explained in the report
- Employee and branch head can understand how panel viewed the write-up

Potential Problem Areas in Case Write-ups

- Disconnects between factors – example, assignment seems very high level but supervision seems to be very detailed and involved
- Information provided in contacts is drastically different than information in case write-up
- Team activities are not clearly delineated and separated from individual achievements related to the team

Important Considerations

- Not every package will identify accomplishments, work products, honors, etc. in the same way
- Employees instructed to follow general format for both position description and Employee Accomplishment Record
- Information is to be credited wherever it appears
- Feedback to the employee and supervisor on case write-up is key to effective operation of RDCP - put yourself in that researcher's position

Panel Feedback

- Feedback about the process will be requested by me from you.
- Feedback about your performance will be requested by me from your fellow panel members and Chair.
  - Competency Directors are interested in awarding good panel member performance and having negative consequences for bad panel member performance.

RDCP Session 8 Schedule

- Employees notified for review March 31, 2004
- Reviewee & Branch Head training April 7, 2004
- Panel Chair names to Kelli by April 7, 2004
- Panels named by April 21, 2004
- Panel training April 28-May 13, 2004
- Packages due OHR and RDCP manager May 14, 2004
- **Packages released to panels on May 17, 2004**
- Panels prepare May 17-June 18, 2004
- Panel Kickoff meetings - May 14-21, 2004
- **Panels meet June 21-August 6, 2004, but not July 6-9**
- Panel reports due to RDCP Mgr and OHR COB August 10, 2004
- Reports released by August 13, 2004
- Actions processed based on time-in-grade order next pay period or placed in queue if controls limit actions - estimated to be August 15, 2004
- Latest date for re-evaluation request September 15, 2004
- Re-evaluation results due by October 18, 2004

Applying the Guide

Case Write-Up I

- Format
  - Combined 10 page limit for Position Description and items 1-7 of Researcher Record; remaining items (8-10) have no page limit
  - No specific penalty at this point for exceeding. If excessive, document in report
- Position Description and Employee Accomplishment Record
  - P. D. covers current assignment (3-4 years, what the employee does on average)
  - Employee Accomplishment Record links the individual to the job - covers current and past accomplishments. Used primarily to provide evidence for Factor IV (Qualifications and Contributions) but also can support all Factors.

Definition of LaRC Research

- Research and development, as conducted at NASA Langley Research Center, includes high payoff activities beyond the risk limit or capability of commercial enterprises, which delivers validated technology and scientific knowledge.
- At one end of a continuum, it is very basic research, progressing through applied research, while at the other end, it is development and validation of new technology including demonstration and evaluation.
- Many of the positions at NASA Langley require progressing and iterating through many of the stages along this continuum depending upon the maturity level and goals of the assigned project.
- Application of the two Guides, RGEG and EDGEG, should use this broader definition of “research.”

Research Grade Evaluation Guide

- Covers positions of performing professionally responsible research or leadership of and participation in research team
- Fits these criteria
  - characterized by systematic investigation of aerospace engineering and atmospheric phenomena using experimental,simulations, or theoretical, and/or computational techniques.
  - characterized by application of scientific methods including problem exploration and definition, planning of the approach and sequence of steps, execution of experiments or studies, interpretation of findings, and documentation or reporting of findings.
- Products typically associated with this kind of work include
  - Development of theories, principles, concepts, techniques, approaches, and processes
  - Results in papers, presentations, patents, inventions, etc

Equipment Development Grade Evaluation Guide, Part 3

- Covers those who perform experimental and investigative activities to develop new and improved equipment or systems and to advance technology
- Fits these criteria
  - Thorough grounding in theories, principles and practices of physical and engineering sciences
  - Ability to use scientific techniques and methods to analyze, measure, and evaluate the phenomena, materials, equipment, and processes
- Products typically associated with this kind of work include
  - Papers describing application of theories, principles, etc.
  - Design concepts, criteria, and data
  - Laboratory and fabrication techniques and processes
  - Laboratory and prototype models, simulations, etc.
  - Patents and inventions

RGEG and EDGEG (3) Factor 1

Research situation or assignment

- Inherent DIFFICULTY and COMPLEXITY of the "research" problem determines the level assigned, not whether research is basic, applied, or prototype development
- A - Organization
  - Title, series
  - Branch and Competency
  - Mission/function of organization
- B - Personal research/development assignment -
  - Current assignment in general terms; project as an example of problem to be solved
  - Include field of research/development
  - Describe individual role…include personal assignment(s) if a team leader
  - Scope, complexity, objectives, means of accomplishment, expected end results, impact on theory or practice, validation processes

RGEG and EDGEG (3) Factor 1, continued

- C - Team leadership
  - If no lead responsibilities, state “The employee has no team leadership responsibilities”
  - If lead responsibilities
    - describe project(s)
    - nature, type, complexity, and impact of involvement
    - problems being researched/product being developed, complexity
    - numbers/types of team members
    - technical leadership provided
    - responsibilities to coordinate others’ work
    - could include technical leadership for a particular aspect of project for the team
  - Based on personal competence in research rather than supervisory or administrative skill
  - Doesn’t have to have formal title, but must show influence on research of others.

RGEG and EDGEG (3) Factor 1, continued

- D - Related functions
  - Briefly summarize regularly assigned non-research/non-development duties involving 25 % or more of time
  - Technical assistance, teaching, special assignments
  - Amounts of 25% or less need not be described
- E - Administrative responsibilities
  - summarize if 25% or more of time
  - Amounts of 25% or less need not be described
  - Contract monitoring can count as “research” duty.

RGEG and EDGEG (3) Factor 2

Supervision received

- Effect of controls on the position
  - Determining course of action
  - Degree of finality of recommendations and decisions
- A - Supervisory relationship
  - Identify supervisor and lead if applicable
  - Outline degree of independence the employee has to select problems to study, plan, execute, and report research/development
- B - Required approvals
  - Kinds of actions requiring approval from supervisor
  - Examples - changes in scope of research/assignment, funding or staffing project, etc.
- C - Delegated authority
  - Nature and extent of the employee's authority to speak or interface with others
  - Covers interaction with professionals and/or non-professionals

Clarification for Supervision Received Factor -

- RGEG, Factor 2 – Supervision Received or EDGEG, Factor Level of Responsibility
- More than branch head supervision.
- General Considerations: Span of control, authority, and influence.
  - As one goes higher in degree level, more of this applies.

How much does the person have or do of these things?

o Responsibility for decision made on technical and nontechnical matters
o Plan, coordinate, and/or establish priorities
o Speak officially for the Government – at what level and to whom, includes representation on committees and seminars, etc.
o Authority to resolve critical or controversial issues – what kind and with whom?
o Negotiate agreements – what kind and with whom?
o Recommend courses of action. As go higher, recommendations are accepted with only formal approval action by others.
o Who provides or gives technical assistance – the supervisor or the reviewee? The reviewee at higher levels provides assistance and guidance to others. How much and to whom?

- By itself, not getting technical supervision from the Branch Head does not exceed Degree C.

RGEG and EDGEG (3) Factor 3

Guidelines and originality

- Degree to which guidelines are available and/or useful, and innovations in concepts, methods, and interpretations
- A - Existing knowledge
  - Deals with degree of originality required
  - Guidance/literature available pertinent to research/development project
  - Nature and extent of employee's knowledge in the field and its usefulness as guidance
  - Gaps or inadequacies in existing literature or methodologies
- B - Originality required and applied
  - Degree of judgment required in guide selection, interpretation, and adaptation
  - To make progress
  - Extend current theory or models
  - Intrinsic difficulty in applying guides

RGEG and EDGEG (3) Factor 3, continued

- C - Demonstrated originality
  - Deals with how research/development activity added to existing state of knowledge
  - Scope and impact of research/development results and products
  - Local, regional, national, international impact

RGEG and EDGEG (3) Factor 4

Qualifications and contributions

- Includes brief statement of general qualifications and accomplishments required for the position
  - Description of qualifications for hiring replacement for the reviewee
- Written in third person but in present tense
  - Incumbent has degree in X field and experience in Y.
- Factor IV is double weighted

Employee Accomplishment Record

- Details supporting all Factors, especially Factor 4
- Total qualifications, professional standing and recognition, and contributions as impact current job, including contribution to the organization's goals and mission
- If publications not appropriate, use other means to judge (Talk to your Competency Director(s))
- Recency of accomplishments important to show maintenance of competence
- Evidence that incumbent is keeping up with advancing and changing disciplines
- Educational degrees may be important, but not necessarily enough

Employee Accomplishment Record

1. Name
2. Education
3. Relevant Professional Training Received
4. Professional Experience:
   a. Present assignment
      Dates
      Brief description of duties and titles of projects
      Name of supervisor
   b. Previous professional positions (within last 10 or so years)
      Dates
      List research, engineering, other technical positions
      Provide brief description of work for each positions

Employee Accomplishment Record

5. Significant Scientific/Engineering/Technical Accomplishments:
   a. Do not duplicate information in item 4
   b. Describe each accomplishment, including results, in a separate paragraph
      - (1) state the accomplishment
      - (2) significance
      - (3) how it was communicated to users
      - (4) the extent to which being applied

6. Scientific/Engineering/Technical Leadership:
   a. Employee's contribution in leading, planning, coordinating
   b. Document effectiveness before and after employee's leadership

Alternate format for Items 4, 5, & 6

- Optional format for items 4, 5, and 6 but must still provide the same information
- Start with present assignment and work back through time
- New section title
  - "Experience, Accomplishments, and Leadership, items 4,5,and 6."
  - **Assignment 1** (Dates from/to), Project, Source of funding
    - Your specific role, including any team leadership
    - Content from items 4 and 6
    - » **Accomplishments**
      - for Assignment 1 described here
      - Content from item 5
    - » **Impact and Significance**
      - Of the accomplishments
      - Content from item 5

Employee Accomplishment Record

7. Professional Scientific/Engineering/Technical Service:
   a. Current membership in professional societies
   b. Rendering scientific judgment
   c. Special assignments or other outreach activities that support organization mission and goals
8. Inventions, Patents Held:
   a. Identify inventions disclosed/patents held
   b. Provide dates
9. Honors, Awards, Recognition, Elected Memberships
   a. List honors, awards and recognition received
   b. Provide date and name of organization for each

Employee Accomplishment Record

10. Work Product List: [Number consecutively]

a. Traditional Publications

Formal refereed publications (journal articles, NASA TPs)

Referenceable oral presentations

Others - NASA TM & CR and briefings not covered in b.

b. System Study Reports

(Reference program or HQ customer, title, contributors, date)

c. Hardware Products

Concept/Technology Development

Trade Studies

Designs

Component/Subsystem/Instrument Development

Integration, Test and Delivery

Employee Accomplishment Record

10. Work Product List continued

d. Software Products

Concept/Technology Development

Trade Studies

Designs

Code Implementation/Development

Integration, Test and Delivery

e. External agreements

Positive Technology Transfer

Memoranda of Understanding and Memoranda of Agreement

RGEG and EDGEG Part 3 Degrees

Can use any Degree levels, A through E+

Degree Definition Examples - Factor 1 - Assignment

(See the Guide for full definitions)

Degree C

- Considerable scope and complexity: difficult to define, novel approaches, sophisticated technique, more than average difficulty. Series of studies. Important contribution to theory or methodology, changes to products, processes, or practices.

Degree D

- Exceeds Degree C, but does not fully meet the intent of Degree E.
- For example, multiple tasks or projects or teams each of Degree C.

Degree E

- Broader scope and complexity: May subdivide into number of separate phases to address critical obstacles to progress or areas of exceptional interest. Exceptionally difficult, important problem areas. Major advances, opens way for more extensive development. Significant progress, not solutions, necessary.

RGEG and EDGEG Part 3 Degrees

Can use any Degree levels, A through E+

Degree Definition Examples - Factor 2 - Supervision
(See the Guide for full definitions)

Degree C

- Supervisor assigns broad problem area, substantial freedom that area, identifies specific problems and approaches. Incumbent performs all steps of studies including reports. Supervisor or project manager generally follows incumbent's recommendations.

Degree D

- Exceeds Degree C, but does not fully meet the intent of Degree E.
- For example, identifies broad problem area, responsibility for most steps of studies including interpretation & applicability of results and evaluations to Center. Interpretations accepted as technically authoritative by Project or Center Program manager. Gives technical guidance to others.

Degree E

- Sets technical directions and gives guidance. Incumbent identifies and explores areas of research fruitful for agency or state of science. Complete responsibility for all steps of studies including interpretation & applicability of results and evaluations to agency. Interpretations accepted as technically authoritative at agency level subject to further validation.

RGEG and EDGEG Part 3 Degrees

Can use any Degree levels, A through E+

Degree Definition Examples - Factor 3- Originality
(See the Guide for full definitions)

Degree C

- Available guides limited in usefulness. High degree of originality required and applied to conduct studies. Innovation or development of new procedures and techniques. Demonstrated originality with impact on incumbent's immediate science or engineering area.

Degree D

- Exceeds Degree C, but does not fully meet the intent of Degree E.
- For example, guides mostly lacking, significant degree of originality applied, large or important impact on broader area.

Degree E

- Very high degree of originality required for solution of problems of marked importance. Creative extension of existing theory or methodology, or technology or development of supplanting, new theory or methodology, or technology. Almost complete absence of applicable guides, literature, and methodology. Problem of marked, national importance and significant impact on that problem.

RGEG and EDGEG Part 3 Degrees

Can use any Degree levels, A through E+

Degree Definition Examples - Factor 4 - Contributions
(See the Guide for full definitions)

Degree C

- Could lead a team or of conceive and formulate research ideas, and/or have productive personal research. Beginning to consult for peer colleagues, at least one important paper or product , source of information within or his/her own organization like the Branch or Competency.

Degree D

- Exceeds Degree C, but does not fully meet the intent of Degree E.
- For example, established consultant in broader organization like the Center, could lead multiple teams, several important papers or products, very productive personal research.

Degree E

- Outstanding stature in field. Could lead large team(s). Extremely productive. Defines state-of-art for others. Consultant for peer colleagues, many important papers, source of information within or outside the Government.

RGEG and EDGEG Part 3 Scoring

RGEG Degree Points

Degree / Factor	A	B	C	D	E
I	2	4	6	8	10
II	2	4	6	8	10
III	2	4	6	8	10
IV	4	8	12	16	20
Total	10	20	30	40	50

Grade	Total Points
GS-11	8-12
GS-12	16-22
GS-13	26-32
GS-14	36-42
GS-15	46-52

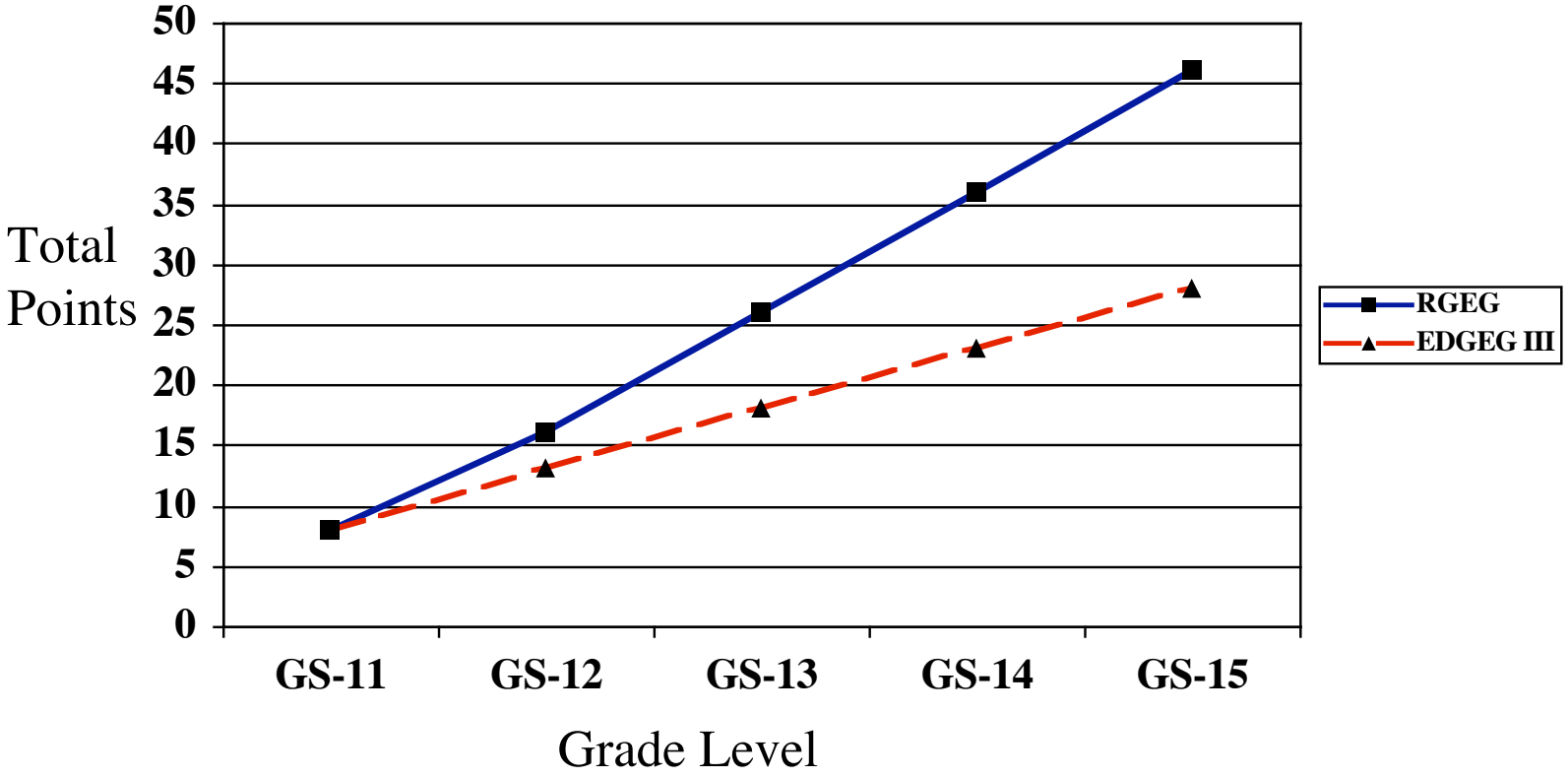
EDGEG 3 Degree Points

Degree / Factor	A	B	C	D	E
I	1	2	3	4	5
II	1	2	3	4	5
III	1	2	3	4	5
IV	2	4	6	8	10
Total	5	10	15	20	25

Grade	Total Points
GS-11	8-11
GS-12	13-16
GS-13	18-21
GS-14	23-26
GS-15	≥ 28

Exceed E for Factor IV, or for two of the other three factors

RGEG vs. EDGEG Scoring



Equipment Development Grade Evaluation Guide

- "Development"
  - advances state-of-the art and is the systematic application of scientific or engineering knowledge to create new or improved equipment, systems, materials, processes, techniques or procedures for a useful function
- Approach
  - Looks at Development Engineering in five major phases:
  - Phase I – Planning and Requirements
  - Phase II – Conceptual
  - Phase III – Definition
  - Phase IV – Prototype Design
  - Phase V – Test and Evaluation

EDGEG Position Descriptions

- Covers
  - positions engaged in planning, formulating, defining, monitoring, managing and evaluating governmental and contractor work for new or improved systems or equipment
- Equipment Development Guide contains three parts
  - Part I – Product Development
  - Part II – Project Management
  - Part III – Experimental Development
- Formats in each section are different
- Use the Part that covers the greatest majority of work performed in the position

EDGEG Part I – Product Development

- Product Development –
  - Covers the work required during the planning, conceptual and definition phases of the development process
  - Also covers providing technical direction to contractors, evaluating contractor work, guiding in-house development work, and serving as consultant or advisor on research and development programs
    - » Includes studies and analysis in depth on selected areas
    - » Systems integration of others work
- Format
  - Factor I – Assignment characteristics
  - Factor II – Level of Responsibility

EDGEG Part I – Factors

- Factor I – Assignment characteristics
  - Scope and complexity of assignment
  - Applicability of precedents and/or problems in converting principles and theories into engineering technology
  - Judgment and knowledge required to solve problems and select among alternative courses of action
  - End results expected
- Factor II – Level of Responsibility
  - Degree of control over work and freedom in:
    - » Determining what development work to pursue
    - » Organizing the work and selecting approach
    - » Determining how assignment will be accomplished
    - » Committing the organization to a course of action

EDGEG Part 1 Scoring

- Appropriate grade level is determined for each of the two Factors
  - Assessment based on comparison of PD/EAR with written descriptions, narrative, characteristics provided in the EDGEG, Part 1.
- **Lowest** grade level of both factors determines overall grade level
  - For example, GS-13 on Factor 1 and GS-14 on Factor 2 means a **GS-13** grade level overall for that position
  - If there is a GS-14 on Factor 1 **and** a GS-14 on Factor 2, the overall grade level for that position is a **GS-14**.

EDGEG, Part 1 General Duties

- Factor I – Assignment characteristics
- GS-13
  - Serves as technical specialist in application of advanced theories, concepts, principles, and processes for an assigned area.
    - » Establish requirements and translate into principles to specify development programs
  - Plan, organize, direct, evaluate, and coordinate others
  - Conduct studies and analyses to determine feasibility of approaches, define concepts and criteria
  - Problems are of controversial or novel nature that have basic guides available.

EDGEG, Part 1 General Duties

- Factor I – Assignment characteristics
- GS-14
  - Serve as expert advisors and provide leadership for broad and complex programs that advance the state-of-the art.
    - » Assess effectiveness of concepts and ideas to achieve goals
    - » Establish promising approaches to achieve advancements
    - » Establish baseline design concepts and criteria
    - » Resolve technical difficulties by changes in approach, etc
    - » Coordinate technical specialists within and outside agency

EDGEG, Part 1 General Duties

- Factor I – Assignment characteristics
- GS-15
  - Serve as authority or consultant in evolving field have extensive impact on agency research and development programs/projects
  - Provide overall leadership and direction to pioneering development efforts in achieving new systems (previously unattainable)
  - Major impact on development process, agency research efforts and future operations
    - » Formulate and define overall mission and program/project objectives and requirements
    - » Identify most promising approaches for unprecedented programs
    - » Issue directives to resolve unforeseen difficulties
    - » Provide authoritative advice within and outside agency
    - » Integrate other experts within and outside agency

EDGEG, Part 1 General Duties

- Factor II – Level of Responsibility
- GS-13
  - Assignments have general objectives with broad policy and planning from higher levels
  - Technical problems resolved without reference to supervisors
  - Recommendations accepted as specialist and largely unreviewed.
  - Represent organization at conferences, high level meetings, technical committees.
  - Negotiate compromises in basic design requirements and characateristics

EDGEG, Part 1 General Duties

- Factor II – Level of Responsibility
- GS-14
  - Assignments convert overall objectives into development programs/projects and policies for others to use
  - Supervision limited to stopping and starting of programs/projects
  - Recommendations evaluated in terms of non-technical factors -
    - » Staffing, schedule, compatibility with other goals
    - » Broad program implications noted to supervisor
  - Adjust broad development activities of others, seen as final
  - Represent organization at high level meetings, technical committees.
    - » Negotiate solutions to critical issues
    - » Serve as symposia or session chairs
    - » Consulted by senior technical specialists in other organizations

EDGEG, Part 1 General Duties

- Factor II – Level of Responsibility
- GS-15
  - Free to plan and execute assignments within agency policy, mission objectives, and funds
  - Recognized as final technical authorities in their area
  - Provide authoritative advice to highest levels in establishing mission objectives, overall program/project goals, and managing development projects
    - » Evaluate effect of significant technological change on fundamental policies, objectives, and goals
  - Represent agency on committees and meetings as recognized authority

EDGEG Part II – Project Management Engineering

- Covered positions report to a Project Manager
  - Managing development of equipment or systems for such projects for a Project Manager
  - Covers those who manage the combined efforts of contractors and Government agencies in support of development of equipment for a project
  - Includes duties such as preparing cost estimates, preparing schedules, participating in design reviews, and reviewing and assessing work efforts of contractors.
- Qualifications
  - Professional competence in engineering field
  - Understands
    - » Engineering and scientific principles and theories
    - » Methods, practices, and techniques of development design
    - » Criteria and characteristics underlying use and purpose of engineered items
- Format - Four Factors
  - 1. Scope of the Assignment, 2. Technical Complexity of the Assignment, 3. Responsibility and Authority, 4.Technical and Managerial Demands

EDGEG Part II – Factors

- Factor I – Scope of the Assignment
  - Level of difficulty and responsibility
    - » Defining technical requirements and characteristics
    - » Planning and coordinating facets of assignment to achieve product within budget
- Factor II – Technical Complexity of the Assignment
  - Degree of complexity introduced by the technical environment and requirements of the products which affects judgment and knowledge needed to:
    - » Formulate approaches
    - » Guide, direct, and evaluate work of others
    - » Solve problems
    - » Select among alternative courses of action
    - » Achieve compromises
    - » Control schedules and costs

Clarification for Responsibility Factor -

- More than branch head supervision.
- General Considerations: Span of control, authority, and influence.
  - As one goes higher in degree level, more of this applies.

How much does the person have or do of these things?

o Responsibility for decision made on technical and nontechnical matters
o Plan, coordinate, and/or establish priorities
o Speak officially for the Government – at what level and to whom, includes representation on committees and seminars, etc.
o Authority to resolve critical or controversial issues – what kind and with whom?
o Negotiate agreements – what kind and with whom?
o Recommend courses of action. As go higher, recommendations are accepted with only formal approval action by others.
o Who provides or gives technical assistance – the supervisor or the reviewee? The reviewee at higher levels provides assistance and guidance to others. How much and to whom?

- By itself, not getting technical supervision from the Branch Head does not exceed Degree C.

EDGEG Part II – Factors (continued)

- Factor III – Responsibility and Authority
  - Degree of freedom and extent of accountability engineer has
  - Considering
    - » Criticality of the assignment to the overall project or mission
    - » Interrelationships among assignments
    - » Sharing of responsibility with other participating organizations
    - » Authority and responsibility vested in review boards and panels
    - » Legal aspects and restrictions
    - » Reliance placed on the engineer due to professional stature
    - » Terms of contracts
    - » Layering of review and control in the Project Management Office

EDGEG Part II – Factors (cont'd)

- Factor IV – Technical and Managerial Demands
  - Degree of technical and managerial knowledge and abilities and leadership qualities required
  - Considers a number of elements that affect technical and managerial demands, including:
    - » Leadership to the agency, participating organizations, contractors and others in creating and proving feasibility of concepts, in defining requirements, and in directing
    - » Impact of the project on public, industry and Government and interest in accomplishment
    - » Conflicting pressures and requirements
    - » Participation with international and other governmental entities

EDGEG Part 2 Degree Definition Examples - Factor 1 - Scope of Assignment (See the Guide for full definitions of C and E)

Degree C

– Wide range of independent activities or areas. Manage major elements for a specific function, or various development phases for several areas

Degree D

– Exceeds Degree C, but does not fully meet the intent of Degree E.

– For example,manage a combination of major elements or elements of multiple functions

Degree E

– Manage overall development effort (Chief engineer or subsystems engineer) of a complex specific end product. (Don't go by title, go by function)

OR

– Responsible for major subject-matter entities of extensive scope and variety, such as all electrical systems for a variety of aircraft.

EDGEG Part 2 Degree Definition Examples - Factor 2 - Technical Complexity (See the Guide for full definitions of C and E)

Degree C

– Application of engineering and scientific principles for which no closely related precedents exist, within available or near available technology

Degree D

– Exceeds Degree C, but does not fully meet the intent of Degree E.

– For example, application of engineering and scientific principles for which few precedents exist, beyond available technology

Degree E

– Previous applications confined to lab studies. Unproven feasibility. Pioneering effort or significant technological breakthroughs and advances sought. Wide application for future programs/projects.

EDGEG Part 2 Degree Definition Examples - Factor 3 - Responsibility and Authority (See the Guide for full definitions of C and E)

Degree C

– Delegated responsibility and authority for day-to-day activities and decisions within assignment. Provides continuity of management throughout all development phases

Degree D

– Exceeds Degree C, but does not fully meet the intent of Degree E.

– For example, local authority and authoritative source for decisions about a significant portion of the project.

Degree E

– Full reliance as recognized management authority in overall program/project definition, organization, direction and emphasis throughout development cycle, broad authority, authoritative source for decisions about total project.

EDGEG Part 2 Degree Definition Examples - Factor 4 - Technical and Managerial Demands

(See the Guide for full definitions for C and E)

Degree C

– Demands stem from unusual difficulties resulting in substantial element of uncertainty and risk. Direct leadership required to implement complex innovations and resolve critical difficulties. Competent technical judgment and managerial skill recognized by other technical specialists.

Degree D

– Exceeds Degree C, but does not fully meet the intent of Degree E.

– For example, very difficult factors result in risk of success for state-of-art advancements. Resourceful and very good technical and leadership skills recognized by others beyond area of speciality.

Degree E

– Successful outcome jeopardized by variety of exceptionally difficult and complex factors. Creative leadership and outstanding managerial competence, recognized broadly. Direct authoritative participation to establish feasibility of concepts and means to achieve advancements beyond state of the art.

EDGEG Part 2 Scoring

Factor	A	B	C	D	E
I	2	4	6	8	10
II	2	4	6	8	10
III	2	4	6	8	10
IV	2	4	6	8	10
Maximum points	8	16	24	32	40

Grade	Total Points
GS-12	8 - 12
GS-13	16 - 22
GS-14	26 - 32
GS-15	$\geq$ 36