DEPARTMENT OF DEFENSE
CIVILIAN PERSONNEL MANAGEMENT SERVICE

Classification Appeal Decision

DOD Decision:	**Boiler Plant Equipment Mechanic, WG-5309-10**
Initial classification:	Boiler Plant Equipment Mechanic, WG-5309-10
Organization:	Army Fort Directorate of Public Works Utilities Branch Maintenance Unit
Date:	April 18, 1995

POSITION INFORMATION

The Department of Defense, Civilian Personnel Management Service received a job grading appeal from an employee presently occupying a position classified as Boiler Plant Equipment Mechanic, WG-5309-10. Previously classified as Boiler Plant Equipment Mechanic, WG-5309-11, the position changed in grade from WG-11 to WG-10 based on initial application of the revised Office of Personnel Management (OPM) job grading standard (JGS) for Heating and Boiler Plant Equipment Mechanic dated November 1992. Final application of the JGS resulted in downgrading the position occupied by the six Boiler Plant Equipment Mechanics.

The appellant takes exception to the downgrading of the Boiler Plant Equipment Mechanic position he occupies. He believes that the size of the boilers and the operation of the largest co-generation plant in the Department of Army increase the difficulty and complexity of the job. He also believes the criticality of boiler plant operations at Fort Xxx due to the severity of the weather increases the job's difficulty and complexity. He cites the Fort contingency plan of complete post evacuation in the event of a plant shut down for more than eight hours as an

example of the difficult conditions under which he must work. Evacuation becomes necessary at Fort Xxx because the loss of steam heat for more than 8 hours when the temperature drops past -30 degrees Fahrenheit results in frozen utilities and mission collapse. The appellant maintains that OPM does not take these complicating situations into consideration in their revised JGS and that they should be considered in the adjudication of this appeal. The appellant also indicates that the daily exposure to health and safety hazards not duplicated anywhere on post, merits increased consideration in the classification of his position. On the basis of this reasoning, the appellant submitted a classification appeal to this office requesting that the position he occupies be reclassified back to Boiler Plant Equipment Mechanic, WG-5309-11.

As stated above, the appellant maintains that OPM does not consider a variety of factors in the revised WG-5309 JGS that he believes significantly add to the difficulty and complexity of the position he occupies. Consequently, we must point out that Title 5, Code of Federal Regulations, Section 532.701, clearly states that a Federal Wage System (FWS) employee "may not appeal the standards established for the job." Therefore, as the designated DoD authority for FWS appeals, we must adjudicate this appeal by applying the current, appropriate OPM JGS (Boiler Plant Equipment Mechanic, WG-5309), as written, to the current official job description certified as accurate by the appellant and his supervisor. We will also review and consider all current information submitted by the appellant and the servicing personnel office as well as information gathered on telephone audits with the appellant and his supervisor.

SERIES AND TITLE DETERMINATION

The position in question maintains, repairs, and overhauls a variety of boiler plant equipment including coal fired, steam generating boilers; steam turbine generators; electric motors (1/2 to 400 horsepower which drive various size pumps); coal and ash conveying systems; water treatment systems; and other miscellaneous power plant auxiliary equipment. When necessary, the position also performs oxygen/acetylene gas and electric arc welding on a variety of dissimilar metals; installs, repairs and maintains high pressure steam piping up to 24 inches in size at pressures up to 450 pounds per square inch (PSI); and maintains and repairs diesel engines used to power backup electric generators.

The duties described above that involve the maintenance, repair, and overhaul of boiler plant equipment clearly identify with the Heating and Boiler Plant Equipment Mechanic occupational series, WG-5309. These duties constitute over 64% of the total work time required of the appealed position. In contrast, the duties that involve oxygen/ acetylene gas and electric arc welding allocate to the Welding occupational series, WG-3703, and they constitute approximately 20 % of the position’s work time. The duties that involve the installation, repair, and maintenance of high pressure steam piping allocate to the Pipefitting occupational series, WG-4204, and they constitute approximately 15 % of the position’s work time. The duties that involve the maintenance and repair of diesel engines used to power electric generators allocate to the Powered Support Systems Mechanic occupational series, WG-5378; however, they now constitute less that 1% of the position’s total work time. During

a telephone audit conducted on 30, the Maintenance Unit supervisor, , provided these new work time percentages.

The above combination of FWS work identifies the appealed position as a "mixed" position performing work in four separate occupations, belonging to four separate occupational families. Explanatory guidance provided in the Introduction to the Job Grading System for Trades and Labor Occupations states that "jobs requiring the performance of work in two or more occupations (mixed jobs) are coded to the occupation which is most important for recruitment, selection, placement, promotion, or reduction in force purposes. It further states that "this is ordinarily the occupation having the highest skill and knowledge requirements." As described in the Grade-Level Determination below, the WG-5309, the WG-4204, and the WG-3703 occupations have the same level skill and knowledge requirements (WG-10). However, as identified in the position description of record and verified by a telephone audit with the Maintenance Unit supervisor, the major or primary duties of the position involve the maintenance, repair and overhaul of a variety of boiler plant equipment. Consequently, the most important series for the recruitment, selection, placement, and promotion of the incumbents of this appealed position is Boiler Plant Equipment Mechanic, WG-5309.

The official title for jobs covered by the WG-5309 occupation at the grade 10 level is "Boiler Plant Equipment Mechanic."

GRADE-LEVEL DETERMINATION

We grade the work of the four occupations identified in the appealed position by comparison to the OPM JGS for that occupation. Each JGS evaluates the different occupations through four grade-determining factors: Skill and Knowledge, Responsibility, Physical Effort and Working Conditions. The comparison to the appropriate JGS follows.

Comparison to the JGS for Heating and Boiler Plant Equipment Mechanic, WG-5309

The WG-5309 JGS describes two levels of nonsupervisory work at grades 8 and 10. We compare these two grade levels to the Heating and Boiler Plant Mechanic duties performed by the incumbent of the position in question through the four FWS grade-determining factors in the following evaluation.

Skill and Knowledge

This factor covers the nature and level of skill, knowledge, and mental application required in performing the assigned duties.

As described in the WG-5309 JGS, WG-08 Heating Equipment Repairers use a working knowledge of the standard methods of combustion, heat transfer principles, and fuel characteristics to install, repair, and maintain a variety of heating boilers and domestic heating equipment and systems. They utilize a familiarity with the construction and operating characteristics of the heating systems so they can install, adjust, repair, or replace components, control devices, and units. They also have the skill to install, align, adjust, and repair oil, gas,

and coal burners and other burning mechanisms as well as heating boiler components located in structures such as dormitories, recreation facilities, residential housing, and remote facilities requiring remote heating equipment.

In contrast, WG-10 Boiler Plant Equipment Mechanics use a thorough knowledge of mechanical, electro-mechanical, and pneumatic principles along with a working knowledge of electronics to repair and maintain single and multi-fuel power boilers and associated auxiliary and pollution control equipment. They have the skill to troubleshoot, maintain, repair, and replace defective equipment, components, and controls in power plants including boiler tubes, refractory linings, turbines, pumps, generators, compressors, and ash shredding equipment using specialized test equipment (e.g. pyrometers, ohmmeters and flow meters) to identify defects, repairs needed, or preventative maintenance required.. They also have the skill and knowledge to troubleshoot, maintain, repair, and replace electronic and electrical controls including electric motors, relays, solenoids, switches, thermostats, rheostats, aquastats, and other similar devices.

The incumbents of the appealed position utilize a comprehensive knowledge of boiler-plant equipment trades to maintain, repair, and overhaul a variety of boiler plant equipment including multiple coal fired, steam generating boilers of 150,00 pounds per hour capacity; steam turbine generators of 2000 to 6250 KVA capacity; and coal handling equipment such as coal crushers, car pullers, car shakers, pan feeders and screens. The incumbents have the skill to maintain, repair, and rework, power boiler systems by rebricking furnaces and ash pits, replacing and repairing coal stokers, and removing and installing boiler tubes, economizers, super heaters, and air heaters. Since the boilers primarily use only crushed coal as fuel, the appealed position also utilizes the skill and knowledge to maintain and repair associated boiler plant pollution control equipment such as bag houses and ash shredding systems.

This level of skill and knowledge clearly exceeds the WG-8 level where, as described above, the Heating Equipment Repairer utilizes a working knowledge of standard maintenance methods associated with the repair and maintenance of heating boilers and domestic heating equipment. Instead, it compares with the WG-10 level where, as described above, the Heating Equipment Mechanic utilizes a thorough knowledge of the maintenance techniques related to the repair and maintenance of single and multi-fueled high-pressure boilers along with associated auxiliary and pollution control equipment. It does not exceed this level which specifically covers the skill and knowledge required to repair, maintain, and replace a variety of complex power boiler plant equipment and systems such as the equipment and systems at the Fort plant which include power boilers with complicated components, critical requirements, and rigid tolerances.

Responsibility

This factor covers the nature and degree of responsibility involved in performing the work.

As described in the WG-5309 JGS, WG-08 Heating Equipment Repairers work under the general supervision of a higher grade worker or supervisor and receive assignments orally or through work orders and instructions. They determine the sequence of work, the general methods and techniques, the tools required, and complete assignments with limited

supervision. They also maintain the heating equipment in compliance with technical and safety specifications and environmental requirements. At this level, the work is subject to spot checks while in progress, and upon completion for compliance with instructions and technical requirements.

By contrast, WG-10 Boiler Plant Equipment Mechanics receive work assignments from a supervisor in the form of oral instructions which may include schematics, diagrams, drawings, or technical manuals. They generally accomplish work on the most complex boiler systems or subsystems with limited technical guidance. They use their judgment to plan repairs and determine maintenance requirements while assuring that all safety procedures and environmental control safeguards are followed. At this level, completed work is reviewed by the supervisor for adherence to established practices, outlined objectives, and technical requirements.

The incumbents of the appealed position receive work assignments from the work leader or supervisor in the form of oral or written instructions. They then perform the assigned tasks independently in accordance with accepted maintenance practices, power boiler and pressure vessel codes, manufacturers' blueprints, and maintenance instructions covering each type of equipment. The incumbents plan the work sequences and select the tools and materials according to the assignment. Completed work is reviewed for timeliness and quality workmanship.

This level of responsibility clearly exceeds the WG-08 level where, as described above, Heating Equipment Repairers receive instructions from a higher grade worker or supervisor and determine the sequence of work, the general methods and techniques, and complete the work assignments on heating boilers and domestic heating equipment with limited supervision. Also at this level, unlike the subject position, a higher graded worker or supervisor is usually available to spot check the work in progress or upon completion. In contrast, the level of responsibility delegated to the subject position compares best with the WG-10 level where mechanics receive general oral or written instructions from a supervisor and then accomplish the work on complex, high-pressure, power-boiler systems and subsystems with limited technical supervision.

P*hysical Effort*

This factor covers the physical effort exerted in performing the assigned work.

The WG-08 Heating Equipment Repairer works in tiring or uncomfortable positions for long periods and occasionally from scaffolds and platforms. This work requires frequent standing, bending, crouching, kneeling, and climbing. In addition, the WG-08 repairer carries tools and equipment weighing up to 50 pounds and occasionally items weighing more with the assistance of lifting devices or other workers. The physical effort at the WG-10 level in the WG-5309 JGS remains the same as that described above for the WG-08 level. The level of physical effort required of the incumbents in accomplishing the Boiler Plant Equipment Mechanic work closely compares to these criteria which do not impact the final grade level determination for the WG-5309 work.

Working Conditions

This factor covers the hazards, physical hardships, and working conditions which workers encounter when performing assigned work.

Heating Equipment Repairers at the WG-08 level usually work indoors on concrete surfaces where there is exposure to dust, dirt, chemicals, heat, steam, noise, and unpleasant odors. They also face continual exposure to the potential for burns, electrical shock, cuts, strains, bruises, and chemical irritation. The working conditions at the WG-10 level in the WG-5309 JGS remain the same as that described above for the WG-08 level. The working conditions encountered by the incumbents in accomplishing the assigned Boiler Plant Equipment Mechanic work also closely compares to these criteria which do not impact the final grade level determination for the WG-5309 work.

Grade Conclusion

Based on the above grade-level evaluation of the four grade-determining factors as they appear in the WG-5309 JGS, the proper grade level for the Heating and Boiler Plant Mechanic occupational work is WG-10.

Comparison to JGS for Welder, WG-3703

The WG-3703 JGS describes three levels of nonsupervisory work at grades 8, 10, and 11. We compare these three grade levels to the welding work performed by the incumbents of the appealed position through the four FWS grade-determining factors in the following evaluation.

Skill and Knowledge

This factor covers the nature and level of skill, knowledge, and mental application required in performing the assigned duties.

As described in the WG-3703 JGS, WG-08 Welding Workers apply sufficient skill and knowledge to set up and operate electric resistance welding machines or perform manual welding processes such as oxyacetylene or oxyhydrogen gas to carry out standard, previously done welding operations on parts made of commonly used metals. They determine the welding techniques and machine settings to be used, assemble and set up the parts, and make the required welds in accordance with welding specifications, accepted shop practices, and oral or written instructions. Depending on the welding process used and the requirements of the work, WG-08 Welding Workers usually complete welds in flat or horizontal positions.

In comparison with WG-08 Welding Workers, WG-10 Welders use the skills and knowledges of accepted welding trade methods to apply a variety of manual welding processes (e.g. several different gas torch and various electric arc processes) to weld all types of commonly used metals and alloys of various sizes, shapes, and thickness. WG-10 welders apply a knowledge of welding standards and how various metals and alloys such as different kinds of steel, aluminum, cast iron, nickel, brass, copper bronze, magnesium, beryllium, and titanium

react to different welding processes and techniques. At this level, they assure complete penetration when required and they control the welding technique to prevent distortion or burning of the metals, and to meet weld dimension, tolerance, and strength. The WG-10 Welders complete welds in all positions, including flat, horizontal, vertical, and overhead.

By contrast, WG-11 Welders apply a greater practical knowledge of welding principles to meet more difficult requirements such as welding recently developed or experimental materials and alloys with welding properties that are not fully known. Other WG-11 Welders apply an unusually high degree of skill and knowledge to complete welds that must pass very high standards of radiographic examination to assure that piping systems and pressure vessels such as boilers can meet extreme operational requirements. If any standard welding method does not produce good results with the above conditions, all WG-11 Welders can use their greater skill and knowledge to modify the welding procedure by altering factors such as the voltage, amperage, preheat, postheat, temperature of the metals, and length of time between successive passes of the welding rod or electrode.

As certified in the PD of record and verified by telephone audits with the appellant and the Maintenance Unit supervisor, the incumbents of the appealed position perform on a regular and recurring basis oxygen/acetylene gas and electric arc welding on a variety of dissimilar metals including aluminum, structural steel, stainless steel, cast iron, copper, bronze, and brass. They assure that completed welds meet all welding specifications and tolerances and that they have sufficient penetration. They control the welding technique to prevent air blisters, burns, and scale. In addition, they plan all layout work and decide the welding process best suited for the job on the basis of such factors as pressures in lines, thickness of metal, or equipment connected to lines.

Assignments include completing welds on power boilers and high pressure steam lines up to 24 inches in size and at pressures up to 450 PSI. Assignments also include work in hard to reach areas necessitating welds in overhead, horizontal, and vertical positions as well as through the use of mirrors.

This level of skill and knowledge exceeds the standard, previously done welding operations typically found at the WG-08 level but do not equate with the new or experimental welding applications described at the WG-11 level. Although the incumbents do complete welds on boilers and high pressure steam lines, these welds are not subject to the high standards of radiographic examination exhibited at the WG-11 level and normally found in marine vessel piping and boiler systems. Instead, the level of skill and knowledge attributed to the appealed position best compares with the WG-10 level where, as described above, welders use accepted trade methods and a variety of manual welding processes to weld all types of commonly used metals and alloys in a variety of welding positions.

Responsibility

This factor covers the nature and degree of responsibility involved in performing the work.

As described in the WG-3703 JGS, WG-08 Welding Workers perform welding operations on the basis of work orders, written, or oral instructions that clearly show what needs to be done.

The responsibility of Welding Workers includes making welds to meet specifications, assuring the proper penetration and freedom from pockets, scales, or other defects. At this level, the supervisor spot checks the work during progress, advises on unusual problems, and checks completed work for overall adequacy.

In comparison with WG-08 Welding Workers, WG-10 Welders determine the work to be done and the steps needed to accomplish it. Proceeding from work orders, blueprints, sketches, drawings, and specifications, they plan and lay out the work and determine the welding techniques to use. The supervisor can be called for advice on unusual problems, but WG-10 Welders accomplish the work with little or no in-progress check and the supervisor only reviews the final product to see that completed welds meet specifications without cracks, slag, or other defects.

By contrast, WG-11 Welders work independently on the basis of oral or written instructions from the supervisor, engineers, or scientists, and from blueprints, sketches, drawings, or work orders. WG-11 Welders modify details of welding procedures, make trial welds to select the best welding process for new applications, and recommend changes in joint design or in the base metals to be used. At this level, Welders assure that welds meet very high standards of radiographic or other examination concerning slag, incomplete fusion, or penetration.

As described in the PD of record, the incumbents work independently on the basis of oral or written instructions from the supervisor or boiler plant work leader. They perform the assigned tasks in accordance with accepted maintenance practices, Association of Mechanical Engineers (ASME) power boiler and pressure vessel codes, and blueprints or instructions covering each type of equipment. The supervisor or work leader reviews completed work for timeliness, workmanship and the ability to produce quality work under minimal supervision.

This level of responsibility clearly exceeds the WG-08 level which describes welding work under relatively close supervision. However, it does not meet the WG-11 level which describes an independent, experimental, work situation. Instead, it best compares with the WG-10 level where, as described above, the welder proceeds to lay out the work and determines the proper welding techniques on the basis of initial instructions, and the supervisor reviews completed work for timeliness and workmanship (i.e. welds are within specifications and free from cracks, slag, or other defects).

Physical Effort

This factor covers the physical effort exerted in performing the assigned work.

WG-08 welding work involves standing, stooping, bending, kneeling, climbing, and crawling, sometimes in awkward and cramped positions. It also involves handling objects weighing from 20 to 50 pounds and, occasionally, in excess of 50 pounds, in setting up work and equipment. The physical effort exerted at the WG-10 and WG-11 levels in the WG-3703 JGS remains the same as that described above for the WG-08 level. The level of physical effort required of the incumbents compares favorably to these criteria which do not impact the final grade level determination for the WG-3703 work.

Working Conditions

This factor covers the hazards, physical hardships, and working conditions which workers encounter when performing assigned work.

Welding Workers at the WG-08 level work indoors and outdoors, sometimes in bad weather and in areas that vary from clean to noisy, dirty, and smoky. Welding at this level involves exposure to fumes, infrared and ultraviolet radiation, heat, flying sparks, the possibility of eye injury, electrical shock, burns, broken bones and the chance of cuts when working with sharp objects. The working conditions described at the WG-10 and WG-11 level in the WG-3703 JGS remain the same as those described above for the WG-08 level. The working conditions encountered by the incumbents compare favorably to these criteria which do not impact the final grade level determination for the WG-3703 work.

Grade Conclusion

Based on the above grade-level evaluation of the four grade-determining factors as they appear in the WG-3702 JGS, the proper grade level for the Welding occupational work is WG-10.

Comparison to JGS for Pipefitter, WG-4204

The WG-4204 JGS describes only one level of nonsupervisory work at grade 10. We compare this grade level to the Pipefitting work performed by the incumbents of the position in question through the four FWS grade-determining factors in the following evaluation.

Skill and Knowledge

This factor covers the nature and level of skill, knowledge, and mental application required in performing the assigned duties.

As described in the WG-4204 JGS, WG-10 Pipefitters have a knowledge of how to install, modify, and repair new and existing high-pressure piping systems and equipment including steamheating, steam generation and hydraulic systems, steam generators, vacuum systems, radiators, and circulating pumps. The WG-10 Pipefitters have the ability to work from building plans, blueprints, and sketches to plan and lay out the routing, placement, pitch, elevation, pressure reduction, expansion, and operation of the piping systems and equipment. They must also know how to install and operate relief valves, check valves, pressure regulators, expansion joints, and other pressure supporting devices that control increases and decreases in pressure, flow, circulation, and expansion in the piping systems.

As described in the position description of record and verified by telephone audit, the incumbents of the appealed position apply on a regular and recurring basis a comprehensive knowledge of pipefitting trades, tasks and procedures to install, repair and maintain steam piping within the Fort boiler plant up to 24 inches in size and at pressures up to 450 PSI. They use this knowledge to install or repair a variety of steam components including pressure reducing valves, relief valves, pressure gauges, condensate return/vacuum pumps and

expansion joints. They also have the ability to plan and lay out pipefitting work using blueprints or lay out sketches, and they troubleshoot and analyze defects or malfunctions in the plant piping systems and equipment, then accomplish the proper repair.

These journey level pipefitting skills and knowledges clearly meet but do not exceed the WG-10 grade level, as it is described above and in the WG-4204 JGS. In order to exceed this journey level, skills and knowledges associated with experimental work situations or marine vessel systems such as those described in the WG-3703 JGS at the WG-11 level would have to be utilized. This is not the case at the Fort steam power plant.

Responsibility

This factor covers the nature and degree of responsibility involved in performing the work.

At the WG-4204-10 level, the supervisor assigns work orally and through work orders, building plans, and blueprints. In accordance with the assignment, WG-10 Pipefitters plan and lay out the needed routing, placement, pitch, incline, and elevation of the systems and equipment. They then complete the installation, modification or repair with little or no check during progress or upon completion. The supervisor checks the overall work to see that it meets accepted trade standards.

As described in the PD of record, the incumbents work independently on the basis of oral or written instructions from the supervisor or boiler plant work leader. They determine the requirements and specifications required, plan the work sequences and select the tools and materials. They then complete the assignment with little or no review and the supervisor or work leader checks the completed work for timeliness, workmanship, and the ability to produce quality work under minimal supervision. This level of responsibility clearly matches the WG-10 grade level as it is described above and in the WG-4204 JGS.

Physical Effort

This factor covers the physical effort exerted in performing the assigned work.

WG-10 Pipefitters make repairs and installations from ladders, scaffolding, platforms, and in hard-to-reach places. They are required to stand, stoop, bend, kneel, climb, and work in tiring and uncomfortable positions. They frequently handle, lift, carry and set up parts and equipment that weigh up to 50 pounds. Occasionally, they may lift and carry items that weigh over 50 pounds. The level of physical effort described in the position description of record closely matches these criteria. Consequently, this factor is credited at the WG-10 level.

Working Conditions

WG-10 Pipefitters work inside and outside normally making installations and repairs in dirty, dusty, and greasy areas where conditions sometimes exist for bad smelling fumes. They also face frequent exposure to the possibility of uncomfortable heat conditions and the possibility of strains, cuts, scrapes, bruises, burns and infections. The working conditions described in the position description of record also closely match these criteria. Consequently, this factor is

credited at the WG-10 level.

Grade Conclusion

Based on the above grade-level evaluation of the four grade-determining factors as they appear in the WG-4204 JGS, the proper grade level for the Pipefitting occupational work is WG-10.

Comparison to JGS for Powered Support Systems Mechanic, WG-5378

The WG-5378 JGS describes only one level of nonsupervisory work at grade 10. The position description of record states that the incumbents of the appealed position spend 10% of their work time repairing, and when necessary, overhauling diesel engines used to power emergency electric generators. This level of work appears to match the WG-10 grade level as described in the WG-5378 JGS. However, site audits with the appellant and the unit supervisor indicate that Fort now belongs to the power grid. This means that the need to operate and maintain the emergency generation equipment has diminished significantly., the unit supervisor, estimates that the incumbents now spend less than 1% of their total work time performing routine maintenance on the diesel engines and that it has been over three years since anyone completed an overhaul on one of these engines. Consequently, the WG-5378-10 work is no longer a regular and recurring part of the position and does not impact the final grade level.

DECISION

The position occupied by the appellant and five coworkers involves work in three different occupational families and series at the WG-10 grade level. In accordance with guidance provided in the Introduction to the Job Grading System for Trades and Labor Occupations, "a mixed job involving performance on a regular and recurring basis of duties in two or more occupations at the same grade level is graded to that same grade level." Therefore, the correct grade level of this appealed position is WG-10 and the correct classification is Boiler Plant Equipment Mechanic, WG-5309-10.