Office of the Naval Inspector General

NAVINSGEN Case Number 20010776
OSC Case Number DI-00-0935

Report of Investigation

Alleged Danger to Public Health and Safety at
Trident Refit Facility, Kings Bay Georgia

12 March 2002

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Preliminary Statement

1. This investigation was initiated upon receipt of an Office of Special Counsel (OSC) letter dated 28 September 2001, tasking the Secretary of the Navy to conduct an investigation pursuant to 5 USC 1213.

2. OSC is an independent federal agency whose primary mission is to safeguard the merit system by protecting federal employees and applicants from prohibited personnel practices. OSC also serves as a channel for federal workers to make allegations of: violations of law; gross mismanagement or waste of funds; abuse of authority; and a substantial and specific danger to the public health and safety.

3. Reports of investigations conducted pursuant to 5 USC 1213 must include: (1) a summary of the information with respect to which the investigation was initiated; (2) a description of the conduct of the investigation; (3) a summary of any evidence obtained from the investigation; (4) a listing of any violation or apparent violation of any law, rule, or regulation; and (5) a description of any action taken or planned as a result of the investigation, such as changes in agency rules, regulations or practices, the restoration of any aggrieved employee, disciplinary action, and referrals to the Attorney General of evidence of criminal violations.

Background

4. The Trident Refit Facility (TRF), Kings Bay, Georgia provides industrial support for incremental overhaul and repair of TRIDENT submarines and for the overhaul of equipment in the TRIDENT Planned Equipment Replacement Program. TRF provides routine services normally required by ships alongside, and performs emergency and emergent voyage repairs to other

submarine units and other similar functions and tasks as directed by higher authority. TRF has a work force of approximately 2,000 military and civilian personnel, and is home to the largest covered dry dock in the Northern Hemisphere. TRF operates and maintains 97 cranes in support of this mission, making it one of the Navy's larger crane-operating facilities.

5. Two recent major organizational changes at TRF are pertinent to this investigation. Before October 1999, the crane operators and riggers were assigned to TRF's Waterfront Services Division while the crane engineers and inspectors were assigned to Naval Submarine Base (SUBASE), Kings Bay. In October 1999, the engineering and inspection function transferred to TRF Engineering Services Division. In January 2001, TRF realigned the operations and maintenance functions under the cognizance of one individual, the Weight Handling Director.

6. The Naval Facilities Engineering Command (NAVFAC) has cognizance of Navy shore activity weight handling equipment (WHE). The Navy Crane Center (NCC) reports directly to Commander, NAVFAC and has direct access to the Chief of Naval Operations (CNO) and the Assistant Secretary of the Navy (Infrastructure and Environment) for matters involving safe and reliable WHE. NCC regularly audits Navy activities that own and/or operate WHE for compliance with program requirements. Program requirements are provided in NAVFAC P-307, and meet or exceed the Occupational Safety and Health Administration (OSHA) standards for the maintenance, inspection, testing, certification, rigging, and operation of WHE. NCC annually audits activities such as TRF that are involved in critical weight handling operations and a high tempo of operations.

Information Leading to the OSC Tasking

7. OSC identified Mr. Complainant as the person who provided OSC the information that led it to task this investigation and said Mr. Complainant has consented to the release of his name. Since May 2001, Mr. Complainant has been a crane operator employed by the Strategic Weapons Facility Atlantic, Kings Bay, Georgia. For the nine years preceding May 2001, he was a crane operator at TRF. Mr. Complainant has been a crane operator for 22 years.

8. In general, Mr. Complainant alleges that the majority of the four portal cranes in operation at TRF are unsafe to operate due to chronic mechanical and electrical defects, but that on multiple occasions management has jeopardized employee safety by ordering crane operators to operate malfunctioning cranes under

threat of disciplinary action. More specific information contained in the OSC letter leads to the formulation of nine specific allegations for investigation:

a. Allegation 1: That the majority of portal cranes in operation at TRF are unsafe to operate due to chronic mechanical and electrical defects. These defects include regular blowing of fuses and circuit breakers that are repeatedly shut down. Management's usual response to replace the fuses or reset the breakers merely results in repetition of the scenario.

b. Allegation 2: That cranes with malfunctioning electrical systems often swing suspended loads uncontrollably and occasionally drop the load.

c. Allegation 3: That management frequently dismisses crane operators' complaints. Because of schedule pressures orders the operators to continue operating malfunctioning cranes under the threat of disciplinary action.

d. Allegation 4: That Mr. Complainant was inappropriately disciplined in October 1999, for causing a crane with apparent mechanical deficiencies to be shutdown for a period of three hours while inspections were being performed.

e. Allegation 5: That following the aforementioned disciplinary action, TRF management requested that the manufacturer of the crane send engineers to inspect the crane, and that the one month delay in this request unnecessarily subjected TRF employees to safety risks.

f. Allegation 6: That TRF management ordered crane operators to operate cranes during hazardous conditions including high winds and on one occasion, when water from a heavy rainfall was dripping on an electrical control panel.

g. Allegation 7: That problems with the electrical control boxes and other equipment associated with the waterfront cranes at TRF can be attributed to the age of the equipment and repair is not possible in many cases. Electrical control systems are worn out and should be replaced.

h. Allegation 8: That management's failure to follow appropriate safety precautions, as described in the preceding allegation, resulted in permanent injuries suffered by one TRF employee approximately one year ago, when an unsecured brake panel fell from a crane undergoing maintenance after the crane was struck by another crane that was in operation at the time.

i. Allegation 9: That TRF supervisors routinely fail to comply with paragraph 2.3 of NAVFAC P-307 in that "out of order" signs are not posted on or near idle cranes and positioning rail stops around the idle cranes is not accomplished.

Description of Conduct of Investigation

9. The Secretary of the Navy referred the OSC tasking letter to the Office of the Naval Inspector General (NAVIG) for investigation. Pursuant to standard Navy practice for the conduct of hotline complaint investigations, and to ensure the chain of command would take and report appropriate corrective, remedial, and disciplinary action on substantiated allegations, NAVIG sent the case to the Commander in Chief, Atlantic Fleet (CINCLANTFLT), for action. CINCLANTFLT, in turn, tasked the investigation to subordinate organizations within its chain of command.

10. The Deputy Commander for Engineering Readiness, Submarine Squadron 20 (SUBRON 20), conducted an on-site investigation. Submarine Squadron 20 is organizationally independent of TRF. NCC's Director of In Service Engineering and NAVIG's Deputy for Hotline Investigations assisted this investigator.

11. The investigators interviewed Mr. Complainant and five of the 16 crane operators currently working at TRF. Their work experience at TRF ranges from seven to 21 years. Their total work experience operating cranes ranges from eight to 40 years. The investigators also interviewed: four TRF management officials, including one who is now retired; two TRF supervisors; two TRF engineers; and two contractor employees.

12. The investigators interviewed the following people, in person unless otherwise noted:

a. Mr. A, Crane Operator. Mr. A has 12 years operating experience at TRF and 23 years experience operating cranes at other facilities.

b. Mr. B, Crane Operator. Mr. B has 21 years operating experience at TRF and 4 years experience operating cranes at other facilities

c. Mr. C, Crane Operator. Mr. C has seven years operating experience at TRF and 21 years experience operating cranes at other facilities.

d. Mr. D, Crane Operator. Mr. D has 11 years operating experience at TRF and 29 years experience operating cranes at other facilities.

e. Mr. Complainant, Crane Operator. Mr. Complainant has 10 years operating experience at TRF and 22 years total crane experience.

f. Mr. E, General Foreman for Riggers and Cranes. Mr. E has been the General Foreman for Riggers and Cranes at TRF for 12 years. He was a Rigger Foreman at TRF for five years before becoming the General Foreman.

g. Mr. F, Code 370 Head (Riggers and Cranes). Mr. F has been the Weight Handling Director (Head of Code 370) since November 2001. He was the TRF Chief Crane Engineer from February 2000 to November 2001. Before that, he spent 34 years at Puget Sound Naval Shipyard as a Design Engineer and Crane Electrical Engineer

h. Mr. G, Waterfront Division Officer. Mr. G was the TRF Waterfront Division Officer when he retired in October 2001. He had 16 years experience working with Navy cranes.

i. Mr. H, Crane Operator Foreman. Mr. H has been a Crane Operator Foreman for 11 years. He has worked with cranes for a total of 33 years.

j. Mr. I, Crane Operator. Mr. I has eight years operating experience at TRF. He was interviewed by phone.

k. Mr. J, TRF Technical Director.

l. Mr. K, J.A. Jones crane operator. Mr. K was interviewed by phone.

m. Mr. L, J.A. Jones Supervisor. Mr. L was interviewed by phone.

n. Mr. M, TRF Director of OSH and Environmental Protection since February 2001; previously TRF OSH Director for 9 years. He was interviewed by phone.

o. Mr. N, TRF Structural Engineer since October 1999; previously TRF Crane Director

p. Mr. O, TRF Electrical Engineer since September 1998

13. The investigators reviewed many documents. They include:

a. SECNAVINST 11260.2, Navy Weight Handling Program for Shore Activities

b. NAVFAC P-307, Management of Weight Handling Equipment

c. Trident Refit Facility Instruction (TRIREFACINST) 11262.1A, Crane Operators Daily Inspection and Reporting Requirements

d. TRIREFAC Crane Accident Report dated 16 June 2000

e. Navy Crane Center ltr 11262 Ser 09F/00-0743 dtd 1 Sep 2000 and TRF Technical Director E-mail of 1 Sep 2000 to NCC which discuss interpretation of NAVFAC P-307 Paragraph 2.3.E

f. TRIREFAC, Kings Bay, GA Standard Operating Procedure 342.003, Rigger-in-Charge Responsibilities

g. TRIREFAC, Kings Bay, GA Standard Operating Procedure 342.011, Crane Movement/Escorts

h. TRIREFAC, Kings Bay, GA Standard Operating Procedure 342.012, Crane Team Operations

i. TRIREFAC, Kings Bay, GA Standard Operating Procedure 342.006, Adverse Operating Procedure

j. TRIREFAC, Kings Bay, GA ltr 5370 Ser 100/1391 dtd 21 Dec 2001

k. Merit Systems Protection Board ruling dated 31 January 2002, Docket Number AT-0752-01-0599-I-1

l. Navy Crane Center annual audit reports for 1997 through 2001

m. TRIREFAC crane maintenance records

n. TRIREFAC crane alteration records

o. Documentation pertaining to Mr. Complainant's grievance of disciplinary action related to 21 October 1999 events

Summary of Evidence Obtained During Investigation

Allegation One

That the majority of portal cranes in operation at TRF are unsafe to operate due to chronic mechanical and electrical defects. These defects include regular blowing of fuses and circuit breakers that

are repeatedly shut down. Management's usual response to replace the fuses or reset the breakers merely results in repetition of the scenario.

Findings

14. TRF has three 25-ton capacity portal cranes (K1 through K3), and one 60-ton portal crane (K4). The portal cranes were built between 1987 and 1989 when TRF was established.

15. NAVFAC P-307 and TRIREFFACINST 11262.1A require that operators complete a daily crane pre-use check, including an operational check, and report deficiencies. The Operators Daily Check List (ODCL) documents completion of the pre-use check, any deficiencies found, and what action was taken with regards to the deficiencies identified.

16. When an operator observes a deficiency in a load bearing part, load controlling part, or an operational safety device, or an operating condition that could affect the safe operation of the crane, the operator must stop any further operation and notify the supervisor. The supervisor must report the deficiency to the activity inspection organization for diagnosis and corrective action, consulting with the activity engineering organization when necessary.

17. The crane may not be returned to service until such deficiencies are either corrected or evaluated by the activity engineering organization as satisfactory for continued operation.

18. All deficiencies annotated on the ODCL require documented resolution. If the action involves maintenance or repair, the engineering division generates a work order. Deficiency reports and work orders for load bearing parts, load controlling parts, and operational safety devices are retained for seven years. ODCL's are retained for the current and previous months.

19. Crane operators and management officials interviewed stated that in the past, the portal cranes exhibited chronic electrical deficiencies. However, they said the majority of repetitive deficiencies did not affect the safe operation of the cranes.

20. Maintenance and inspection records corroborate their testimony. Crane inspection records for the majority of reported electrical deficiencies indicate that inspectors evaluated the cranes as safe to operate despite the reported deficiency. The records also showed that where the deficiency

was confirmed and required engineering resolution, TRF took appropriate action before restoring the crane to service.

21. In NCC's opinion, neither the type nor the pattern of electrical deficiencies reported created an unsafe condition. NCC analyzed approximately 400 records, and determined that the number of TRF portal crane circuit breaker trips was relatively high for portal cranes in general, but not inconsistent with the initial usage of newer electronically controlled cranes. Many trips were chronic, i.e., repeat events. Crane K-1 tripped more than the other portal cranes, mostly on the rotate function. Cranes K-2, K-3 and K-4 did have rotate and other trips but not as frequently as K-1, based on a review of shop repair orders. In most instances where the rotate function tripped out, the trip occurred before the crane operator could start the rotate motion, or after the rotate motion was stopped. NCC does not consider this an unsafe condition.

22. NCC determined that TRF took appropriate action on all reported deficiencies. The records show that inspectors, TRF and Base Operating Services (BOS) contractor engineers, and on occasion, factory specialists were constantly evaluating all cranes with these types of deficiencies. However, NCC noted that although these cranes have been in service for over 10 years, it was not until approximately two years ago that adequate root-cause analysis was done to minimize the number of trips. Before then, TRF personnel routinely replaced and reset fuses and circuit breakers without further analysis. In the last two years, TRF has gained sufficient electrical engineering expertise to troubleshoot and reduce the number of trips.

23. In October 1999, the Weight Handling Equipment (WHE)/Material Handling Equipment (MHE) Inspection Certification and Engineering functions transferred from Naval Submarine Base, Kings Bay (SUBASE) to TRF, along with the existing staff. The staff included a crane electrical engineer, hired in September 1998, who had little crane experience. His most recent work experience was in facilities engineering. TRF recognized that significant improvement was needed in these programs, and hired a chief crane engineer with extensive work experience in crane design and electrical engineering, and recent experience resolving electrical control issues identical to those at TRF.

24. Currently only one of the four portal cranes and none of the dry dock bridge cranes at TRF exhibit failure that could be termed repetitive or chronic. Portal crane K-1 still exhibits intermittent breaker tripping during initiation of rotate operations. NCC recently developed the technical specifications

for replacing the electrical control systems on K-1, K-2 and K-3, and NCC is in the process of developing the acquisition plan. The award will consist of two parts, design and manufacture/installation. TRF has obtained funds for the design work, and budgeted installation funding for K-1 for FY03. Pending overhaul of K-1's control system, TRF promulgated written procedures for handling trips, which NCC approved. Of the five TRF operators interviewed, only Mr. C considered crane K-1's known operating limitations to be a safety issue. The other four operators, management personnel and NCC do not consider K-1's limitations a safety concern.

Conclusions

25. Before 2000, TRF portal cranes did exhibit chronic or repetitive electrical deficiencies. The preponderance of the testimonial and documentary evidence demonstrates that these deficiencies did not affect safety in most cases. TRF has corrected the deficiencies in three of the four cranes. TRF will correct the deficiencies in the fourth crane during FY03. The allegation that the majority of portal cranes at TRF are unsafe to operate is unsubstantiated.

Listing of Actual/Apparent Violations

26. None.

Action Planned or Taken

27. TRF will continue with the plan to replace the electrical controls on portal crane K-1 discussed in the findings.

Allegation Two

That cranes with malfunctioning electrical systems often swing suspended loads uncontrollably and occasionally drop the load.

Findings

28. TRF crane operators and management officials interviewed stated there have been instances when a loss of power interrupted a crane's rotation and caused the load to swing in a pendulum-like motion. However, they said electrical failures during rotation were infrequent. Records that document power failures do not indicate whether a crane was in motion when the power failure occurred.

29. In the opinion of NCC personnel, the risk created by an electrical failure during crane rotation is low. There is no

danger of dropping the load when this occurs. The load may swing back and forth somewhat; the amount of this "pendulum" action will vary with the load, radius of the swing, wind speed, and, most important, the speed of the rotation.

30. NCC personnel explained that if the load swings in a close tolerance situation, it might collide with another object. Normal operating procedures, however, require the crane operator to reduce speed as the load approaches another object or a confined area. None of the documents the investigators or NCC personnel reviewed indicate a power failure during rotation has caused an accident. None of the witnesses could recall a power failure during rotation that caused an accident.

31. NAVFAC P-307 requires that crane operators initiate rotation very slowly. Where clearances are limited, it also requires use of properly sized and inspected chainfalls, turnbuckles, or similar equipment to aid in load control.[1]

32. Currently no cranes exhibit electrical failures during rotation. Portal crane K-1 still exhibits intermittent power failure when an operator attempts to start a rotation, but since this failure always occurs before any swing motion begins, there is no pendulum-like effect.

33. The crane operators and management officials interviewed during the investigation could not recall a crane dropping a load after 1995, when one portal crane exhibited an intermittent problem resulting in loads lowering independently of operator control on a few occasions over a several month period. This problem could not be duplicated during several testing periods, but it was diagnosed and repaired about six years ago and has not reoccurred.

Conclusions

34. The infrequent instances in which loss of electrical power resulted in pendulum-like motion of the load did not result in any accidents or dropped loads. No evidence indicates that operators failed to take, or supervisors failed to enforce, the NAVFAC P-307 mandated precautions that serve to minimize risk in the event of loss of power. The incident in 1995 is

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[1] Chainfalls and other devices are used for precise and very small movements of the load (down to fractions of inches), both horizontally and vertically, in both tight clearance situations and for precision assembly/disassembly.

insufficient to support a contention that cranes "occasionally drop the load." This allegation is unsubstantiated.

Listing of Actual/Apparent Violations

35. None.

Action Planned or Taken

36. No additional action is planned.

Allegation Three

That management frequently dismisses crane operators' complaints and because of schedule pressures orders the operators to continue operating malfunctioning cranes, under the threat of disciplinary action.

Findings

37. The majority of crane operators interviewed felt that before the new TRF chief engineer arrived in February 2000, the crane deficiencies they identified too frequently resulted in inspection, engineering and Base Operating Services (BOS) contractor personnel stating that the problem couldn't be duplicated or that the crane was functioning within design specifications.[2]

38. Based on a review of records and interviews, NCC and the investigators found that TRF personnel responded to the trouble calls and made reasonable efforts to evaluate and correct the conditions by adjusting the cranes to the settings specified in applicable design drawings. However, some crane operators were able to make the cranes operate more smoothly by using settings that were outside the range of design specifications.

39. The SUBASE engineering staff that transferred to TRF in October 1999 lacked in-depth technical knowledge. As a result, they did not challenge specifications in applicable drawings that produced sub-optimal crane operating characteristics. When they found the operators had changed the settings, they would reset them "to specifications." At one point, someone put padlocks on the adjustment points to prevent the crane operators from changing the settings. TRF crane operators, who had extensive operating experience at TRF and elsewhere that caused

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[2] The BOS contractor is responsible for troubleshooting and maintenance/repair; TRF engineers assist if needed, and verify.

them to believe the cranes were not operating as smoothly as they could if "properly" adjusted, became very frustrated.

40. TRF management recognized the need to improve technical knowledge and in the Fall of 1999 took action to hire a technically competent chief engineer. The individual selected for the position had 34 years experience in crane design and electrical engineering, and was instrumental in the submission of over 100 crane alteration requests that significantly improved reliability. Many of these alteration requests challenged design specifications that impeded maintainability of the cranes or produced sub-optimal operating characteristics.

41. Traditionally, the inspection (quality assurance) function is organizationally independent of the operations function. However, following a Functional Assessment (FA), TRF, in January 2001, consolidated the crane engineering and inspection functions with those of crane and rigging services. This change was made to strengthen lines of communication and responsibilities between maintenance and operations, while maintaining the necessary independence at the worker/first line supervisor level. This arrangement closely parallels the pattern followed in naval shipyards.

42. In November 2001, the chief engineer was promoted to Weight Handling Director, responsible for crane engineering and operations. The senior mechanical engineer who also possesses significant crane experience was promoted to chief engineer. The actions required to fill the vacant position for a crane mechanical engineer have been initiated, but may take from four to six months due to the difficulty in attracting and hiring qualified engineers in the Kings Bay area.

43. Crane operator testimony on the topic of "coercive working environment" was inconsistent and vague. Mr. A and Mr. C felt that, in the past, they had been frequently pressured to operate "malfunctioning cranes." Mr. B felt that this had happened, but infrequently. Mr. D and Mr. I stated that they had never been pressured to operate a malfunctioning crane. None of the operators could recall any specific situation, involving themselves or other operators, in which an operator was threatened with disciplinary action for refusing to operate a crane. Mr. A and Mr. C identified one supervisor in particular as the source of the perceived coercion. However, neither could provide an example of what they considered to be intimidating or coercive supervisory conduct. They believed the coercion to be implied, "operate the crane or else."

44. The "malfunctioning crane" scenarios described were instances in which a deficiency was noted; the BOS contractor and TRF engineers were involved; and the crane was restored to service, i.e., evaluated as safe to operate.

45. Two operators, Mr. C who felt frequently pressured in the past and Mr. B, the operator who had felt infrequently pressured, expressed concern about the disciplinary action taken against Mr. Complainant in October 1999, and against a second individual in approximately the same timeframe. The concern was that because of the discipline, operators might be afraid to point out problems.

46. The supervisor described as having a "coercive manner" was counseled for other performance issues on a number of occasions and placed on a performance improvement plan. Some of the operators and both his first and second line supervisors described him as lacking managerial skills. He generally disliked discussing the basis for his decisions or actions with operators. As stated earlier, this individual is no longer employed at TRF.

47. The former Waterfront Division Officer strongly disagreed that operators were pressured by supervisors to operate cranes they perceived as malfunctioning. He stated that throughout his tour, he routinely told all personnel who worked for him that if they disagreed with their first line supervisor, they were to notify the second line supervisor. If they disagreed with their second line supervisor, they were to notify him. He was never approached by any operator regarding pressure to operate a crane perceived as unsafe. The General Foreman and crane operators confirm this statement.

48. All operators interviewed believed that they currently have a positive working environment, due primarily to changes in management. The chief engineer, hired in February 2000, met weekly with crane operators, improving communications between operations and maintenance. This individual was promoted to Weight Handling Director, in charge of both operations and maintenance, in November 2001, and has continued exerting a positive organizational influence. The new commanding officer is perceived as being personally engaged in operational and maintenance issues in a positive manner.

Conclusions

49. During the time period covered by Mr. Complainant's allegation, Mr. A and Mr. C felt pressured to operate cranes

they perceived as malfunctioning after the cranes had been restored to service. However, TRF management complied with the required procedures for evaluating and restoring cranes to service, and ensured they were adjusted to design specifications. Consequently, supervisors had a reasonable expectation that operators would operate the cranes even though the operators may have been able to adjust them to operate more smoothly. Although Mr. A and Mr. C perceived pressure they were unable to explain in what manner they were pressured, and there was no evidence of any violation of procedure, statute or regulation. However, all crane operators and management officials interviewed agree that they currently have a positive working environment. Due to the preponderance of the evidence, this allegation is unsubstantiated.

Listing of Actual/Apparent Violations

50. None.

Action Planned or Taken

51. No additional action is planned. Management understands the importance of the engineering and technical proficiency of TRF personnel and will continue to focus on maintaining and improving it.

Allegation Four

That Mr. Complainant was inappropriately disciplined in October 1999, for causing a crane with apparent mechanical deficiencies to be shutdown for a period of three hours while inspections were being performed.

Findings

52. On 21 October 1999, TRF was dry docking USS WEST VIRGINIA. Mr. Complainant was assigned to operate dry dock bridge crane G. This crane had a history of "rough bridge control," a characteristic that affected ease of operation, but had been evaluated as safe to operate. On 7 October 1999, the Waterfront Services Division Officer issued a memorandum advising operators that management was aware of the condition and was pursuing corrective action. The memorandum directed operators to continue annotating their ODCLs as usual, but also stated that management did not anticipate securing the crane for this condition. Mr. Complainant was aware of the contents of the memorandum.

53. The usual routine for a dry-docking is for the crane team to report early to the worksite, complete the crane pre-use check, and conduct a man-basket test.[3] The crane then stands idle until it's needed for further lifts once the submarine has entered the dry dock. Aside from transfer of personnel, initial lifts include providing the submarine with safety devices, such as handrails, for topside personnel and lifts related to connecting various brows.

54. During the required pre-operative inspection, Mr. Complainant wrote "rough bridge control" and "rollback" on his ODCL.[4] Mr. Complainant notified the stand-in supervisor of the deficiencies.[5] The General Foreman and the Waterfront Division officer reported to the worksite, followed shortly by a crane engineer, crane inspector and safety office representative.

55. Following adjustment of some electrical contacts and greasing of the crane, engineering services personnel and the certifying official restored G crane to service. The Waterfront Division Officer personally notified Mr. Complainant that the crane was back in service, and ordered him to place the crane in operation. Approximately three hours elapsed from the time the deficiencies were identified to restoration of the crane to service, but the overall operation was delayed not more than 30 to 45 minutes.

56. In both his pre-action statement and during his interview, Mr. Complainant indicated that he anticipated that the crane would be restored to service. However, he did not immediately comply with the order to place the crane in operation. Ignoring repeated instructions to operate the crane from the rigger, the rigger in charge, and the Dock Master, Mr. Complainant completed three cellular phone calls, to the stand-in supervisor, the Union president, and the safety office, over a period of

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[3] A static ten-minute crane test is required on the man-basket prior to its use in transferring personnel to or from the submarine in the dry dock.

[4] Rollback refers to the load momentarily going in the opposite direction when the crane lever is pulled to hoist up. There is always a small degree of rollback due to stretch in the wire as gears and brakes engage, and weight on the hook is a factor. Maintenance personnel did not find rollback in excess of specifications, nor did the manufacturer's representatives during their 7 December 1999 visit.

[5] The stand-in supervisor was a crane operator. Operators who had an interest in acting as the stand-in supervisor during the first-line supervisor's absence could sign up on a list, and the assignment was rotated.

approximately ten minutes. These calls resulted in Mr. Complainant being charged with refusing to obey an order.

57. Mr. Complainant had the right to refuse to operate the crane if he still believed it to be unsafe after adjustment and greasing. In his pre-action statement, Mr. Complainant stated that he called the acting first-line supervisor to notify him that the crane was back in service. He called the Union president to make sure he was making the right decision and the safe decision to operate the crane. His longest call was to the safety office to notify the Occupational Safety and Health (OSH) Manager of his final decision to operate the crane.

58. The OSH Manager at the time, now retired, described the phone conversation in a 12 November 1999 email. He stated that Mr. Complainant called to discuss restoring the G crane to service, and his discomfort with operating the crane. The OSH Manager told Mr. Complainant that based on reports by the certifying official and the maintenance person, and based on his own observation of operations, he determined that the crane could be safely operated. They then discussed Mr. Complainant's options, including refusing to operate the crane, and possible repercussions.

59. Since Mr. Complainant anticipated the crane would be restored to service after adjustment, he had ample time to make the calls and decide whether he would operate the crane before it was restored to service. Had he done so, the ten minute delay in operations resulting from his calls would not have occurred.

60. The normal routine during a dry-docking is for all personnel to work until the divers go in the water to confirm the submarine's position above the blocks before lowering.[6] This process takes 30 to 35 minutes, and all personnel involved in the dry-docking are given a lunch break at this time. According to the General Foreman (who was the Dock Master in charge of this operation), he notified the team during the "pre-shift" brief that morning that they would be working through until the divers went in the water, and would then break for lunch.[7] Per a

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[6] Relieving for lunch in the dry dock was rare even when the operation didn't involve dry-docking of a submarine. This was due more to operator convenience that to operational constraints. Operators did not want to climb the 85-foot ladder more often than necessary.

[7] The crane operator for dry-dockings participates in the "pre-shift" brief via radio to avoid having to descend from the crane.

negotiated agreement between the Union and management, crane operators can be required to work through lunch if supervisors determined this was necessary.

61. Shortly after initiating crane operations, Mr. Complainant contacted his shop to request a lunch relief. When his relief arrived, Mr. Complainant was engaged in a series of critical lifts. A delay occurred in positioning the shore power brow when Mr. Complainant, ignoring both hand and radio signals, argued first with the rigger in charge, then with the General Foreman about relieving for lunch. After several minutes' delay, Mr. Complainant expressed concern that his relief, without direction, had started towards the crane via the "catwalk" vice waiting at the crane-landing platform to relieve.[8] The General Foreman then directed him to relieve for lunch.

62. The General Manager stated during his interview that he directed Mr. Complainant to go ahead and relieve because enough time had been wasted arguing the matter, and he was tired of arguing with Mr. Complainant. He estimated the delay related to the lunch relief as 45 minutes, and that due to the length of the delay, he had to notify the Docking Officer so that he could notify the submarine's commanding officer of the delay.

63. Mr. I, the crane operator Mr. Complainant identified as his lunch relief on 21 October 1999 stated that it was possible he did relieve Mr. Complainant for lunch that day, but did not have any recall of the event. Mr. I stated that he dislikes using the catwalk, and that the only situation in which he would ever consider using the catwalk to access the crane is one in which some urgency was involved. Mr. Complainant did not believe that he communicated any sense of urgency about being relieved when he requested that his shop send a lunch relief.

64. Pre-action statements taken from both supervisory and non-supervisory personnel involved in the dry docking contained estimates of the delay in effecting the lunch relief that ranged from 5 minutes to 30 minutes.[9] Based on descriptions of the

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[8] The catwalk is a 3 feet wide, 100 feet high walkway with rails installed to allow operators and maintenance personnel to board the crane from any position. Management discourages using the catwalk for operator swap-outs unless absolutely necessary.

[9] These estimates appeared to be for the time to actually swap out the operators, and may not include time discussing the relief. Mr. Complainant stated that his relief arrived at about 1145. According to dry-docking records/logs, shore power was connected at 1255.

conversations and actions that took place, the most reasonable estimate is 20 minutes. Approximately 60 TRF and ships force personnel were impacted by the delay.

65. By letter of 10 November 1999, Mr. Complainant's second-line supervisor (the General Foreman) proposed suspending Mr. Complainant on the grounds that on 21 October 1999, he refused to obey a direct order and delayed work operations. After Mr. Complainant and his union representative responded orally and in writing, the Services Superintendent issued a decision letter suspending Mr. Complainant for 5 days.

66. The notice of proposed suspension identified each charge as a "second offense." However, an earlier settlement agreement precluded use of an earlier charge of "delay in carrying out a supervisor's order." Therefore, the decision letter modified the charges and number of offenses to "refusal to obey an order (first offense)" and "causing a delay in work operation (first offense)."

67. Mr. Complainant submitted a grievance, and in March 2000, the TRF Commanding Officer reduced the suspension to 3 days.[10] On 31 March 2000, the Union requested that the grievance be sent to binding arbitration. To date, the Union has declined to set a date for the arbitration hearing.

68. The current OSH Director stated that his office plays a role in verifying that correct safety procedures are followed, however his personnel are not trained or qualified to review work done by professional engineers. Consequently, safety representatives would not override an engineering determination that a crane was safe to operate.

69. The Technical Director stated that he discussed management's reasons for the disciplinary action with Mr. Complainant and his union representative at the third-step grievance meeting. He did not recall Mr. Complainant ever saying that he believed the discipline to be retaliatory, simply that he felt the discipline to be unfair and unwarranted. The Technical Director's impression was that Mr. Complainant did not

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[10] The current Commanding Officer and Executive Officer reported to TRF in August 2001 and November 2000 respectively. The Technical Director has been with TRF since its establishment.

believe that his phone calls or actions during the lunch relief were at all disruptive of the work.

70. The TRF Discipline/Adverse Action Taken for Cause instruction contains a schedule of offenses and range of action for first, second and third offenses. For the offense "Deliberate refusal or failure or delay in carrying out any proper order, work assignment or instruction," the range of action is reprimand to removal for first offense; 5-day suspension to removal for second offense; and 10-day suspension to removal for third offense.

Conclusions

71. The investigators found no evidence to suggest that management's actions were motivated by Mr. Complainant's inspection of the crane and the resulting crane maintenance, or anything other than what was communicated to Mr. Complainant in the disciplinary action decision letter. Since the allegation is that management's action was due to the delay resulting from Mr. Complainant's inspection of the crane, the allegation is unsubstantiated.

72. Moreover, Mr. Complainant's decision to place the calls after maintenance was completed, and after he was ordered to operate the crane, was not reasonable. He anticipated that the crane would be restored to service and had ample opportunity to make the calls before they would delay operations. Connecting the shore brow was a time-sensitive evolution that involved many people. Mr. Complainant's repeated disregard of signals and argumentative conduct in attempting to relieve for lunch delayed this task. The action taken against Mr. Complainant for causing these delays by disobeying proper orders was within the applicable table of penalties. Assessing the reasonableness of Mr. Complainant's actions against the reasonableness of management's actions has been appropriately referred to arbitration.

Listing of Actual/Apparent Violations

73. None.

Action Planned or Taken

74. No additional action is planned.

Allegation Five

That following the aforementioned disciplinary action, TRF management requested that the manufacturer of the crane send engineers to inspect the crane, and that the one month delay in this request unnecessarily subjected TRF employees to safety risks.

Findings

75. TRF inspection and engineering personnel evaluated the crane as safe to operate after they inspected and adjusted it on 21 October 1999.

76. TRF issued the Service Work Authorization document authorizing the manufacturer, P&H, to evaluate the bridge and trolley functions on the G crane on 24 November 1999.[11] P&H performed the work from 7 to 10 December 1999.

77. TRF management officials asked the P&H engineers who serviced G crane the week of 7 December 1999, if it was unsafe to operate in the condition they found it at the time they started their evaluation. They said that the crane met specifications and was safe to operate.

78. After reviewing the records for G and H bridge cranes, NCC personnel found that while G crane appeared to have had more trouble calls than H crane, the records identified no problems that would lead to an unsafe condition. The reported condition of the bridge running roughly may have been an annoyance to the operators and may have required tedious operating procedures, but the crane would be safe to operate.

79. NCC personnel reviewed the shop repair orders issued for problems occurring on 21 and 22 October 1999. The actual ODCLs were unavailable since required retention is previous and current month. On 21 October, the main hoist was reported as having a five second delay when lowering the hook. Troubleshooting could not duplicate the problem. There was a three second delay, which was evaluated as the circuit working as designed. Even if this delay were five seconds, NCC found that it would not be detrimental to safety. The shop repair

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[11] The official responsible for submitting the work request could not recall when the request was submitted, or circumstances that influenced the timing of the request. However, availability of funding may have been a factor. Fiscal Year 2000 Defense Appropriations Bill was signed into law on 25 October 1999. FY 2000 resource authorization would not have been available to TRF until sometime in November.

order dated 22 October called for replacing an electrical relay in the brake release circuit, but did not indicate what problem was reported. NCC personnel explained that the problem with these relays typically is a defective electronic module, which does not allow the hoist brake to disengage. This prevents the operation of the hoist but is not an unsafe condition.

80. The work performed by the manufacturer's engineer on 7 - 10 December 1999 was related to adjusting various parameters for smoother operation of the bridge drive and checking for rollback on the main hoist. No adjustments were made to the main hoist. NCC personnel could not determine from the records whether the bridge drive was adjusted but said that rough operation of the bridge is not a safety issue.

81. TRF permanently resolved the rough bridge control problem in May 2000. The TRF Chief engineer found that although TRF engineers, BOS contractor personnel and manufacturers' representatives had been adjusting various settings to the design specifications, these specifications did not comply with technical manual and procurement contract requirements. An alteration request was submitted to modify the design specifications on brakes and acceleration. This work eliminated the rough bridge control.

Conclusions

82. This allegation is unsubstantiated.

Listing of Actual/Apparent Violations

83. None.

Action Planned or Taken

84. No additional action is planned.

Allegation Six

That TRF management ordered crane operators to operate cranes during hazardous conditions including high winds and, on one occasion, when water from a heavy rainfall was dripping on an electrical control panel.

Findings

85. Prior to August 1999, TRF procedures required crane operators to suspend operations and notify a supervisor when sustained wind speed reached 30 mph. Supervisors were then

required to visit the work site. If the lift was critical, and the supervisor determined that the lift could be made safely, the supervisor had the authority to direct continued operation. In August 1999, TRF issued SOP 342.006, Adverse Operating Procedures. This SOP states that lifts made in high wind conditions (wind speed greater than 30 mph) shall be conducted as complex lifts, requiring not only the approval, but also the presence of the supervisor. The supervisor assumes all responsibility for the safety of the lift.

86. Due to the topography of the Kings Bay area, wind conditions can vary greatly at the six refit sites. It is not unusual to have near-normal wind conditions at one refit site, and simultaneous high wind conditions at another.

87. None of the operators or management officials interviewed recalled any violation of the current SOP.

88. Mr. A recalled being told by his first-line supervisor on a number of occasions, prior to the August 1999 change in procedures, to continue operations without the supervisor visiting the work site after notification of high wind conditions. He acknowledged having poor recall of specific instances or details, and could not recall even an approximate date, what crane he was operating, or what he was lifting. Mr. D recalled this occurring once or twice prior to August 1999, most likely in 1998. Mr. B, Mr. C, and Mr. I could not recall any instance of a supervisor failing to comply with the required procedures.

89. The first-line supervisor denied ever having failed to report to the worksite when notified of high wind conditions.

90. Management personnel stated that to their knowledge, no supervisor had failed to report to a worksite when notified of a hazardous condition.

91. Mr. A stated that, approximately four years ago, his first-line supervisor directed him to continue operating portal crane K-4 after the supervisor was notified of water dripping onto the electrical controls through a light fixture during heavy rains. Mr. D overheard the conversation between the supervisor and the K-4 crane operator.

92. Management personnel were unaware of this incident until this investigation. Mr. A stated that he did not notify the General Foreman at the time because he did not believe the General Foreman would override the first-line supervisor's

decision to continue operating the crane. The General Foreman stated that he would most definitely have shut the crane down.

Conclusions

93. The allegation that a supervisor ordered continued operation of a crane with water dripping onto its electrical control panel is substantiated. This supervisor was separated from civil service in December 2001 for matters unrelated to this investigation. While this same supervisor may also have failed in some instances to properly respond to reports of adverse weather prior to 1999, the preponderance of the evidence shows that supervisors and operators complied with the required procedures for operating cranes in adverse weather conditions since August 1999. Based on this evidence, the allegation that supervisors improperly ordered crane operations in high winds is unsubstantiated.

Listing of Actual/Apparent Violations

94. NAVFAC P-307 paragraph 9.3 and TRF SOP 342.012, Crane Team Operations.

Action Planned or Taken

95. None. The supervisor concerned is no longer in civil service.

Allegation Seven

That problems with the electrical control boxes and other equipment associated with the waterfront cranes at TRF can be attributed to the age of the equipment and repair is not possible in many cases. Electrical control systems are worn out and should be replaced.

Findings

96. The portal and dry dock cranes were built between 1987 and 1989 when TRF was established.

97. Crane operators and management personnel interviewed stated that the electrical control systems in use on the waterfront cranes need modernization.

98. The recurring electrical problems that affected these cranes prior to early 2000 have been resolved, with the exception of K-1 that continues to have electrical control problems. Maintenance and inspection records show significant

overall improvement in reliability due to increased effectiveness in diagnosis and root-cause analysis.

99. NCC determined that these cranes are safe to operate despite the obsolescence of the electrical control systems.

100. TRF has a crane strategic plan that makes provisions for the modernization of the electrical control systems.

101. In FY01, TRF funded development of the technical specifications for replacement of the electrical control systems on K-1, K-2 and K-3. NCC, who is responsible for Navy crane acquisitions, is in the process of developing the acquisition plan. The award will consist of two parts, design and manufacture/installation. Funding has been provided for the design work, and installation funding for K-1 is budgeted for FY03.

Conclusions

102. While TRF did experience technical difficulties in resolving electrical problems with the waterfront cranes, there is no evidence that management failed to take reasonable or timely action. Equipment ages and must periodically be replaced. TRF's strategic plan addressing this issue was in place long before initiation of this investigation. This allegation, to the extent that it implies safety or standards violations or inadequate management oversight, is unsubstantiated.

Listing of Actual/Apparent Violations

103. None.

Action Planned or Taken

104. Continue to execute the strategic plan for phased replacement of aged equipment.

Allegation Eight

That management's failure to follow appropriate safety precautions resulted in permanent injuries suffered by one TRF employee approximately one year ago, when an unsecured brake panel fell from a crane undergoing maintenance after the crane was struck by another crane that was in operation at the time.

Findings

105. On 24 May 2000, a TRF crane team was assigned to the dry dock facility to assist in preparations for dry-docking a submarine. The team included a rigger-in-charge (RIC), a crane rigger and a crane operator. The crane rigger, upon exiting the dry dock, signaled the crane operator to raise the hoist and move the crane's trolley west. The crane operator raised the hoist but mistakenly moved the entire crane north.

106. When he became aware of the impending collision with a static crane in his path, the crane operator applied the brakes, but not in time to avoid striking the static crane. An unsecured brake guard on the static crane fell 75 feet and struck a TRF employee, who was seriously injured.

107. The accident investigators concluded the crane team failed to maintain communication and proper signals while working in close proximity to a known hazard and that this was the primary cause of the accident.

108. The G and H cranes are 85-ton capacity bridge cranes that operate in a 1,000-foot dry dock, 700 feet of which is covered. There are four maintenance platforms, three under cover. On 24 May 2000, G crane was sitting under cover at the northern end of the dry dock for painting and preservation work. The H crane was operating in the southern end of the drydock. These cranes are designed to work together, and it was a common practice to have both cranes under cover while one or both were operating.[12]

109. The three members of the crane crew assigned to work the dry-docking that day were aware of the idle crane's location. They were not concerned about its position since the majority of the work was at the opposite end of the drydock. In his response to a proposed suspension, the crane operator stated that he momentarily forgot where the idle crane was parked because he was preoccupied with where he was going to set his load. The crane team had been working for 4 to 5 hours, and had completed over 40 lifts when the accident occurred.

110. The crane operator accepted responsibility for the accident, and did not grieve his three-day suspension. TRF required that he and the RIC be recertified for their positions

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[12] TRF SOP 342.011 contains provisions for operating bridge cranes in close proximity.

after the accident. The operator was not recertified, and was downgraded from his WG11 position to a WG6 position with a loss in pay. He submitted an MSPB appeal; MSPB upheld TRF's actions.[13]

111. The RIC filed a grievance over his 5-day suspension, citing the absence of rail stops and the crane operator's independent actions as mitigating factors. TRF denied his grievance, which has been assigned to arbitration.

112. Although Mr. Complainant contends that management was at fault for the accident because rail stops were not in place, rails stops are not a mandatory safety precaution. Following the accident, TRF management and the Union sought guidance from NCC on the interpretation of NAVFAC P-307, paragraph 2.3.e, which states that for cranes undergoing maintenance, "Where other cranes are in operation on the same runway, rail stops or other suitable means shall be provided to prevent interference with the idle crane." Management and the Union asked whether various precautions would meet NCC's definition of "suitable means" to prevent interference with the idle crane.

113. NCC said that notification of operators, hanging warning flags/banners, warning lights, proximity warning devices, and warning tags on controllers all satisfied the meaning of the term "suitable means." NCC cautioned that, depending on the conditions or circumstances, more than one precaution may be necessary. NCC also said it does not advocate use of rail stops, as their effectiveness is questionable and can result in damage to the crane.[14]

114. After the accident, TRF took several corrective actions based on recommendations in the accident investigation report.

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[13] During mandatory post-accident drug testing, the operator revealed that the evening before the accident he had taken prescription medications to treat ongoing pain and sleeping problems caused by prior off-duty injuries. He had failed to tell his supervisors that he was taking these medications, which may cause drowsiness. Thereafter, TRF permanently disqualified him from operating a crane for lack of credibility and reliability.

[14] Portable rail stops are intended to slide and eventually bring the crane to a stop. At times they can be effective. At other times they can stick (i.e., not slide - possibly due to rail and clamp condition), and the resulting impact (especially if approached, unwittingly, at higher speeds with a large crane) could cause wheel/axle damage or other structural or mechanical damage to the crane. Then again, they can slide excessively and not stop the crane before it strikes another one.

One of the actions was installation of a collision avoidance system that slows an operating crane to its minimum speed when it approaches within 100 feet of another crane.

115. Maintenance records show that BOS contractor personnel completed the auxiliary hoist brake maintenance that required removing the guard on 19 May 2000. However, maintenance is not considered complete until certification, if required, is accomplished. A BOS contractor supervisor interviewed stated that, per their usual practice, the maintenance personnel did not reinstall the brake guard because TRF personnel had to recertify the brake in this case. The auxiliary hoist was tagged out as required, however the "out of commission" warning sign required by NAVFAC P307 paragraph 2.3.d was either not used or prematurely removed after the BOS contractor completed the brake work.[15] On 20 May 2000, the BOS contractor moved G crane to the northern covered maintenance platform for painting and preservation. The BOS contractor completed the last application of paint and cleanup on 24 May 2000, prior to the accident. After the accident, the BOS contractor issued written guidance to employees requiring bagging, tagging, and securing of tools, equipment and guards.

116. In his interview, Mr. Complainant did not dispute that the primary cause of this accident was operator error and the crane team's failure to maintain proper communications, nor did he believe that the disciplinary action against these individuals was inappropriate. He asserted that management should have born more responsibility than was reflected in the after-accident actions or corrective measures. When pressed for an example of what he meant, he stated that the General Foreman had ordered the stationing of the G crane at the mid-north platform, and that he had argued with him about this. He felt that the General Foreman should have received a suspension at least equal to that of the RIC.

117. It would not have been improper for the General Foreman to direct movement of the G crane to the platform. However, both the General Foreman's statement and that of the BOS contractor crane operator who moved the crane contradict Mr. Complainant's statement. The General Foreman stated that he did not recall ever discussing the relocation of the G crane with Mr. Complainant. He stated that he started leave on 22 May 2000,

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[15] Since the auxiliary hoist brake guard had not been replaced pending the certification, an OOC sign should have been on the crane.

due to his marriage on 25 May 2000, and did not return from his honeymoon until 16 June. He was notified of the accident, and went to the hospital to see the injured employee, but did not return to TRF during that time. The interview of the BOS contractor crane operator confirms that the General Foreman was not involved in directing movement of the G crane to the covered maintenance platform as Mr. Complainant alleged. The BOS contractor crane operator who moved the G crane to the covered maintenance platform did so on the morning of 20 May 2000, a Saturday. He attempted to notify the crane shop by phone and in person to obtain the required approval, but the shop was vacant and locked up. On direction of his supervisor, he moved the G crane.

Conclusions

118. The primary cause of this accident was operator error and inadequate crane team communications. Inadequate compliance with the required safety precautions for cranes under maintenance may have been a contributing factor. In view of the crane team's awareness of the position of the idle crane, it is highly questionable whether the placement of the required "out of commission" sign on the crane would have been useful as an added reminder to the operator, or encouraged the injured worker to give the crane a wider berth. The preponderance of the evidence does not support the contention that management was primarily responsible for this accident or the resultant injury; the allegation is therefore unsubstantiated.

Listing of Actual/Apparent Violations

119. NAVFAC P-307, paragraph 2.3.d.

Action Planned or Taken

120. No additional action is planned.

Allegation Nine

> That TRF supervisors routinely fail to comply with paragraph 2.3 of NAVFAC P-307 in that "out of order" signs are not posted on or near idle cranes and positioning rail stops around the idle cranes is not accomplished.

Findings

121. As previously discussed, rail stops around idle cranes undergoing maintenance are not mandatory, nor does NCC advocate their use.

122. Crane operators and TRF management personnel said that before 24 May 2000, compliance with other required safety precautions, particularly use of "out of commission" signs during maintenance, was inconsistent. They indicated this was due, in part, to disagreement over when a crane is considered to be in a maintenance status.

123. NCC interpretation of "maintenance" includes any and all work performed on a crane, whether or not it involves disassembly and whether or not the work being performed renders the crane inoperative.

124. TRF conducted extensive training on this topic following the 24 May 2000 accident. All interviewees concurred that the correct procedures are now routinely followed.

125. The lead investigator, without notice, monitored maintenance being performed on K-4. He observed two men repairing minor pitting detected during a routine inspection. They complied with all appropriate safety requirements specified by NAVFAC P-307 for cranes undergoing maintenance.

Conclusions

126. The allegation that in the past, TRF failed to routinely comply with NAVFAC P-307 paragraph 2.3.d in that "out of order" signs were not posted on or near idle cranes undergoing maintenance is substantiated. However, appropriate and sufficient corrective measures were taken, and compliance with this requirement is now routine.

Listing of Actual/Apparent Violations

127. NAVFAC P-307, paragraph 2.3.d.

Action Planned or Taken

128. No additional action is planned.

Dollar/Projective Savings and Management Initiatives

129. TRF management has not identified to the investigators any specific dollar savings or projected savings that have resulted from the investigation itself. Nor has it led to any management initiatives other than those identified in the discussion of specific allegations. This is largely due to the fact that most of the corrective actions identified and discussed in this report were taken before the investigation started. Clearly,

however, the steps taken by TRF that are documented in this report have led to savings by reducing the amount of crane "down time" and in other ways that will result in substantial savings over time.

130. Similarly, the benefit to the working environment that has resulted from smoother crane operation and the recognition that management does understand and react positively to crane operator concerns creates invaluable goodwill and trust that cannot be measured by dollars saved.

131. As this investigation illustrates, there is no doubt that the cost of accidents are many. They include not only delays to operations and money expended for repairs and medical care, but human pain and suffering. If the actions TRF has already taken prevent a single accident, the benefit will far outweigh the cost, even if those costs savings cannot be measured.

132. Finally, it is appropriate to observe that as is the case of the accident described in this report, most crane accidents are the result of operator error, not mechanical failure. At one time, it was not uncommon to hear the argument that crane accidents were difficult to prevent and to be expected in the course of normal operations. Due in large part to the initiatives of the weight handling community itself, this erroneous assumption has largely disappeared. Navy has made substantial progress in reducing the number and severity of accidents by focusing on accident prevention training and procedures. Statistics maintained by NCC demonstrate that there has been a 40 percent reduction in the number of weight handling accidents in the last two years. The weight handling community should be commended for these efforts and encouraged to continue striving for an accident-free working environment.

Office of the Naval Inspector General

NAVINSGEN Case Number 20010776
OSC Case Number DI-00-0935

Supplemental Report of Investigation
Alleged Danger to Public Health and Safety at
Trident Refit Facility, Kings Bay Georgia

14 August 2002

1. This supplemental report responds to issues raised in a May 29, 2002 Office of Special Counsel (OSC) letter commenting on the original report of investigation dated 12 March 2002.

Issue I: Request to Identify Witnesses in the Report

2. To address this issue, the Department of the Navy (DON) is providing OSC an unredacted "EDITED FOR PUBLIC RELEASE" copy of the original report and this supplemental report for transmission to the Complainant, the President, and Congress. DON is also providing a second copy of these reports, without names, for OSC to distribute to the Public.

Issue II: Request to Interview More Witnesses

3. Investigators only interviewed five of 16 Trident Refit Facility (TRF) crane operators before preparing the report of investigation. Those crane operators provided conflicting answers to several of the investigators' questions. The May 29, 2002 OSC letter indicates OSC finds the conclusions for allegation numbers three and six appear unreasonable due to the limited number of interviewees and their conflicting testimony.

4. Because of the concerns raised by OSC, one of the investigators interviewed 10 of the remaining 11 crane operators; the 11th crane operator was not hired until this year and would have no direct knowledge of the events involved in this investigation. The following information supplements the findings in the original report.

Allegation Three

5. Mr. Complainant alleged that management frequently dismissed crane operators' safety concerns, and due to time constraints, ordered the operators to continue operating malfunctioning cranes under the threat of disciplinary action. None of the 16 crane operators interviewed reported any coercive, threatening or hostile conduct by supervisors in response to their voicing concerns about a crane or refusing to operate a crane. As noted in the original report, two crane operators testified that in the past they "felt" they had been frequently pressured to operate

"malfunctioning cranes." However, neither could provide an example of what they considered to be intimidating or coercive supervisory conduct, noting only an implied "operate the crane or else." One operator felt that this had happened, but infrequently. None of the operators could recall any specific situation, involving themselves or other operators, in which an operator was threatened with disciplinary action for refusing to operate a crane.

6. The evidence demonstrates that when TRF crane operators informed their supervisors of concerns over the operation of the cranes, the supervisors routinely followed procedures that required they contact the appropriate engineering, inspection, or certifying officials for further evaluation of the crane. In those cases where these officials reported it was safe to operate the crane, the first-line supervisors properly directed that operations resume. Indeed, it was their duty to give such direction under those circumstances. The interviews established that the crane operators also understood that were within their rights to refuse to operate the crane if they still believed it was unsafe after others had evaluated it and declared it safe to operate. Accordingly, our conclusion following the additional interviews remains that this allegation is not substantiated.

Allegation Six

7. Mr. Complainant alleged that TRF management ordered crane operators to operate cranes during hazardous conditions, including high winds. It is important to understand that management has the authority to order crane operations during high wind conditions, based on a risk assessment. To the extent Mr. Complainant's complaint stems from a belief that management should not have this authority, the answer is simply that DON does not accept his views.

8. The only factual issue involving high winds that emerged during the investigation was the possibility that a first-line supervisor may not have reported to the work site in all instances when notified of high winds. This requirement flows from a statement in P-307 that required supervisors to report to the work site when told of hazardous conditions.

9. Based on the additional interviews, we find that this occurred on a few occasions prior to August 1999. In August 1999, TRF corrected the problem by implementing a standard operating procedure (SOP) specific to adverse weather. This SOP required that management official come to the site and remain present during the entire crane operation.

10. None of the 10 additional crane operators interviewed reported any violations of the current (August 1999) adverse weather SOP. Five could recall no violation of the pre-1999 procedures that were based on an interpretation of P-307. Of the

remaining five operators, Mr. 1 did not have first hand knowledge of any violations but believed that some operators had been told to continue operations after calling the shop to advise of high winds; Mr. 2 stated that a supervisor may have failed to report to the work site on one or two occasions, but couldn't say when that happened or which supervisor; Mr. 3 stated that when the first-line supervisor was absent, it was sometimes difficult to get the stand-in supervisor to come down to the work site; Mr. 4 stated that the first-line supervisor failed to report to the work site on a number of occasions. Due to the first-line supervisor's separation from civil service, and no reported violations of the current SOP, no additional corrective action is planned.

11. We conclude, therefore, that the allegation should remain not substantiated. However, we have no objection to a characterization of the allegation that indicates it is substantiated for the period before August 1999, but not substantiated thereafter.

Procedures for Safe Operation of Portal Crane K-1

12. OSC requested additional information on enforcement of the written procedures TRF currently has in place for the safe operation of portal crane K-1. The Navy Crane Center (NCC) and TRF provided the following information. The written procedures are posted in the cab of the crane, and operators have been trained on the requirements. TRF's Head Crane Engineer, based on interactions with crane operators and trouble calls, believes that operators are complying with the procedures. The first line supervisor concurs with this opinion. NCC reiterated that K-1 is safe to operate despite the electrical deficiency. There have been no instances of the breaker tripping while the crane is in motion. The trips occur before rotation begins or after motion has stopped.