



Florida Power

A Progress Energy Company

Crystal River Nuclear Plant
Docket No. 50-302
Operating License No. DPR-72

Ref: 10CFR21.21

October 31, 2001
3F1001-07

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

Subject: 10CFR21 Report – Contracted Inspection Service

Dear Sir:

The purpose of this letter is to provide a 30-day written report to the NRC, pursuant to 10CFR21.21, concerning a contracted inspection service performed on a safety-related pump at an offsite repair facility for Florida Power Corporation (FPC) by Washington Group International, Inc. (WGI). The FPC Responsible Officer was notified of the reportability evaluation results, the 2-day facsimile required pursuant to 10CFR21.21 was transmitted to the NRC Operations Center, and receipt of the facsimile was confirmed (Event No. 38333) on October 1, 2001. WGI was notified of FPC's intention to report the enclosed issue to the NRC under 10CFR21.21.

WGI has notified FPC that they do not agree with the FPC determination that the enclosed issue is reportable under 10CFR21.21.

No new commitments are contained in this submittal. If you have questions regarding this submittal, please contact Mr. Sid Powell, Supervisor, Licensing & Regulatory Programs, at (352) 563-4883.

Sincerely,

J. J. Holden
Director Site Operations

JJH/dwh

Attachment

xc: Regional Administrator, Region II
Senior Resident Inspector
NRR Project Manager
Washington Group International, Inc.

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10CFR21.21(d)(4) requires that the 30-day written report shall include, but need not be limited to, the following information, to the extent known:

- (i) Name and address of the individual or individuals informing the Commission.

Florida Power Corporation (FPC)
Crystal River Unit 3 (CR-3)
15760 West Power Line Street
Crystal River, Florida 34428-6708

- (ii) Identification of the facility, the activity, or the basic component supplied for such facility or such activity within the United States which fails to comply or contains a defect.

Inspection services provided by:

Washington Group International, Inc.
PO Box 1281
Houston, Texas 77251-1281
FPC Contract No. N01067AD, Purchase Order #F742538K

- (iii) Identification of the firm constructing the facility or supplying the basic component which fails to comply or contains a defect.

Washington Group International, Inc.
PO Box 1281
Houston, Texas 77251-1281

- (iv) Nature of the defect or failure to comply and the safety hazard which is created or could be created by such defect or failure to comply.

In 1999, a spare RWP-3A pump lower bowl assembly was rebuilt by Tampa Armature Works (TAW) under a non-safety related Purchase Order No. F742538K. FPC contracted WGI (Contract No. N01067AD) to witness the RWP-3A rebuilding activities and ensure, through inspection, that the work was performed in accordance with detailed instructions provided by FPC. Satisfactory completion of the inspection was to be a major component of the dedication process to return RWP-3A to a safety related status. The shop traveler prepared by TAW and approved by FPC included a detailed sketch and specific guidance with respect to the orientation of the pump lip seal.

In February 2000, TAW signed off on and WGI Inspector 21 stamped Shop Traveler Line Item #30A attesting to witnessing the correct orientation of the lip seal. The rebuilt pump lower bowl assembly was subsequently delivered to FPC. An independent test of the lip seal indicated it was not installed correctly. Subsequent disassembly by FPC determined that the lip seal was installed upside down.

FPC considers the above condition to be reportable pursuant to 10CFR21.21 as a defect associated with a substantial safety hazard.

10CFR21.3 states, in part, that a defect means a deviation in a basic component delivered to a purchaser for use in a facility or activity subject to 10CFR21 if, on the basis of an evaluation, the deviation could create a substantial safety hazard.

Deviation

A deviation means a departure from the technical requirements included in a procurement document. The deviation in this case is WGI's failure to identify the incorrect orientation of the lip seal as specified in the FPC approved work instructions.

Basic Component

In all cases, basic component includes safety-related design, analysis, inspection, testing, fabrication, replacement of parts, or consulting services that are associated with the component hardware whether these services are performed by the component supplier or others. The basic component in this case is the contracted inspection service associated with the spare safety-related RWP-3A pump rebuild activity.

Substantial Safety Hazard Evaluation

After any maintenance (including replacement) of RWP-3A and before return to service, Surveillance Procedure SP-340A, "RWP-3A, DCP-1A and Valve Surveillance," would be performed to establish operability for the CR-3 Improved Technical Specifications. This SP performs functional testing of the pump and includes verifying and recording RWP flush water flow rates. With the lip seal installed incorrectly, flush water flow would not be present and the pump would not have been placed back in service.

NUREG-0302, page 21.3(d)-8, states the following: "Quality assurance inspections or tests performed by the licensee cannot be counted upon to prevent installation of defective basic components. In evaluating deviations the assumption which must be made is that the component is installed in the facility, then if it could create a substantial safety hazard it must be reported to the NRC as a defect."

NUREG-0302, page 21.3(k)-2, states the following: "The loss of safety function of a basic component is considered a major reduction in the degree of protection provided to the public health and safety. It is possible that the defect might also exist in the redundant basic component, which could result in a loss of safety function. The existence of a defective basic component, considering a single failure of its counterpart redundant basic component, could result in a loss of safety function. Actually, the counterpart component need not fail. It could be removed from service for other reasons such as routine preventive maintenance or inspection."

Using the above guidance from NUREG-0302, it is assumed that the spare pump, with the incorrect lip seal orientation, is installed in the plant, returned to service, and the opposite train is unavailable. A letter from the pump manufacturer (Bingham-Willamette Co.) states that running the pumps without flush/lubricating water would produce a pump failure in 1 to 3 minutes. Therefore, the lip seal being installed incorrectly would lead to premature failure of the pump. With the loss of one pump and the opposite train assumed to be unavailable, a complete loss of the safety related Decay Heat Raw Water, Decay Heat Closed Cycle Cooling (DC), and Decay Heat Removal (DH) would occur.

The primary safety function of RWP-3A and RWP-3B is to provide heat removal from the DC System to the Ultimate Heat Sink during design basis accidents. The DC System removes heat from the DH System. The spare RWP-3A lip seal being installed incorrectly could have created a loss of a safety function to the extent that there would have been a major reduction in the degree of protection provided to ensure public health and safety. Therefore, a substantial safety hazard could have been created due to the orientation of the lip seal on the spare RWP-3A.

- (v) The date on which the information of such defect or failure to comply was obtained.

On August 24, 2001, FPC personnel performed a water test on the rebuilt Decay Heat Raw Water System pump RWP-3A lower bowl assembly to determine whether the lip seal was installed correctly. Dedication of the pump following the refurbishment by TAW had been completed on April 18, 2000, following receipt inspection and review of the completed shop traveler and inspection report prepared by WGI. Installation of RWP-3A would be a critical path activity in the October 2001 Refueling Outage and this test was performed for prudence to provide assurance of success in the Outage. No bearing flush/lubricating water flow was observed coming from the pump. This condition was immediately documented in the FPC Corrective Action Program as Nuclear Condition Report (NCR) 47080. Upon disassembly of the pump bowl, FPC personnel confirmed that the lip seal was installed incorrectly.

The 10CFR21.21 reportability evaluation was completed on October 1, 2001.

- (vi) In the case of a basic component which contains a defect or fails to comply, the number and location of all such components in use at, supplied for, or being supplied for one or more facilities or activities subject to the regulations of this part.

The basic component in this case is a specific contracted inspection activity. No further information is available regarding similar inspection activities for other facilities.

- (vii) The corrective action which has been, is being, or will be taken; the name of the individual or organization responsible for the action; and the length of time that has been or will be taken to complete the action.

FPC Immediate Actions

FPC maintenance personnel replaced the lip seal and reassembled RWP-3A.

TAW Root Causes

1. Employee: The TAW Mechanical Equipment Services Division (MS) employee failed to follow TAW work instructions, which required the use of a sketch, from the FPC MP-150 specification, as an assembly guide. The employee confused the required sketch with an overview in his possession and did not locate the correct sketch. This situation was compounded by the fact that as received, this component [lip seal] was missing, so no record of original assembly was available.
2. Management: Management failed to supply the required drawing to the employee, with the repair instructions, and failed to adequately reinforce the need to discontinue work until the specified drawing was reviewed, during training prior to the work activity.

TAW Suggested Corrective Actions

1. MS employees are to receive formal reinforcement as to the nature and importance of this problem and this corrective action. This will include specific reinforcement on the need to stop work until all visual aids, sketches, etc., called out in the work instructions, are obtained and reviewed.
2. The Mechanical Equipment Services General Shop Procedure will be amended to note that management/supervision will supply and attach a copy of all required sketches, prints, and drawings required, to the work instructions for each job.

Implementation Date: November 11, 2001

Follow-up Method: The Site Quality Coordinator will review similar jobs for compliance to the work instructions and the presence of any needed sketches, prints, and drawings for a period of 30 days.

WGI Root Cause and Suggested Corrective Actions

WGI completed their evaluation in regard to this issue and FPC's recent filing to the NRC regarding 10CFR21. WGI concluded there were no failure to comply conditions identified with respect to the implementation of the Raytheon Nuclear Quality Program for the work activity under the contract [FPC Contract No. N01067AD]. However, WGI has identified the following suggested corrective action:

WGI is developing a supplement to the standard instructions issued to each Inspector. These supplemental instructions will apply to inspection activities performed under FPC Contract No. N01067AD and will discuss topics such as:

1. WGI Inspectors will be cautioned to assure each item of the FPC provided inspection plan is clearly understood. Any discrepancies regarding cross-references in the plan or unclear notation(s) (no matter how slight) should be brought to FPC attention. In addition, each Inspector will be advised to document each discussion with FPC in their inspection report for future reference.

2. WGI Houston office will be evaluating each work assignment to determine if there are any steps (items) identified as critical, advising the Inspector to pay particular attention to such items.

Implementation Date: WGI Houston office expects to have the Supplemental Instructions available for Inspector use no later than November 1, 2001.

- (viii) Any advice related to the defect or failure to comply about the facility, activity, or basic component that has been, is being, or will be given to purchasers or licensees.

None.