U.S. NUCLEAR REGULATORY COMMISSION

REGION III

MAINTENANCE INSPECTION TEAM

Report No. 50-346/87030

Docket No. 50-346 License No. NPF-3

Licensee: Toledo Edison Company
Edison Plaza
300 Madison Avenue
Toledo, OH 43652

Facility Name: Davis-Besse Nuclear Power Station, Unit 1

Inspection At: Davis-Besse Site, Oak Harbor, Ohio

Inspection Conducted: November 2-6, 1987

Team Members: J. C. Bjorgen
I. Villalva
D. C. Kosloff
C. L. Vanderniet

Approved By: W. G. Guldemond, Chief
Reactor Projects Branch 2

12-17-87
Date

Inspection Summary

Inspection from November 2-6, 1987 (Report No. 50-346/87030)
Areas Inspected: Maintenance inspection team review of four selected systems; main feedwater, service water, component cooling water, and spent fuel pool cooling water, including an evaluation of the material condition and maintenance backlog for each system.
Results: No new items of concern were identified.

DETAILS

1. Persons Contacted

Toledo Edison

Lou Storz, Plant Manager
*Neal Bonner, Assistant Plant Manager, Maintenance
*Phil Hildebrandt, Engineering General Director
*Wes Johnson, Systems Engineering Manager (Primary)
*John Wood, Systems Engineering Director
*Todd Anderson, Maintenance Planning Superintendent
*B. R. Beyer, Nuclear Projects Director
*E. R. Benson, Materials Manager
*P. W. Jacobsen, NDED, EQ
*H. O. Ramsett, Quality Assurance Director
*R. D. Brandt, Acting Operations Superintendent
*J. C. Sturdavant, Licensing Principal
*George Honma, Licensing, Compliance Supervisor
*Robert Schrauder, Manager, Nuclear Licensing

Other members of the operations and maintenance departments

Nuclear Regulatory Commission

*R DeFayette, Chief, Reactor Projects Section 3A
*H. Miller, Director, Division of Reactor Safety
*P. Byron, Senior Resident Inspector

* Denotes personnel attending the exit meeting on November 6, 1987.

2. Background and Purpose

Inadequate maintenance of several systems contributed significantly to the June 5, 1985 event at Davis-Besse and to the resultant extended shutdown. After improvements were made in the plant's management organization and in the material condition of the plant, the NRC authorized restart in December 1986. This authorization took into account that although all safety-related systems appeared to be in acceptable condition, a significant backlog of maintenance work remained for balance of plant (BOP) systems. In response to the NRC's concerns regarding the backlog, the licensee developed an organized program to address these systems with completion dates projected for one to two years after startup. However, following a reactor trip on September 6, 1987, several equipment failures occurred, casting doubt on the material condition of the plant.

To evaluate the material condition of the plant and the current status of the maintenance backlog, a maintenance team inspection was planned for the week of November 2-6, 1987. The team consisted of:

Team Leader: J. C. Bjorgen, Reactor Inspector, DRS, RIII

Team Members: I. Villalva, Senior Reactor/Nuclear Engineer, DRP, RIII
D. C. Kosloff, Resident Inspector, Davis-Besse
C. L. Vanderniet, Resident Inspector, Monticello

Additional Personnel: P. M. Byron, Senior Resident Inspector, Davis-Besse

The primary mission of the team was to evaluate the material condition of the plant, including the effect of the outstanding maintenance work on the plant's safety (i.e., to determine if there is reasonable assurance that the plant can be operated safely from a maintenance point of view). Toward this end, the team inspected four systems: main feedwater; service water; component cooling water; and spent fuel pool cooling water. The team performed an in depth walkdown of each system, followed by a detailed review of the maintenance backlog for each system. These four systems were selected because the resident inspectors felt that they were typical and would provide a representative sample of the plant systems.

3. Inspection Efforts and Results

A. System Walkdowns

(1) Service Water and Component Cooling Water

The accessible portions of the service water and component cooling water systems were walked down with the system engineer. The inspector checked for conditions requiring maintenance that may not have been identified by the licensee but found none. For items previously identified by the licensee, the inspector checked how old the item was and evaluated its relative importance to long term safe operation of the plant. Neither the age nor the importance were considered to be of major safety significance.

The material condition of the two systems was considered good. The inspector identified no items requiring maintenance that had not been previously identified by the licensee. In addition, the inspector evaluated two items which had been previously evaluated by the Augmented Inspection Team (AIT) subsequent to the September 6-7, 1987 event as documented in Report No. 50-346-87025(AIT).

The first item involves the three component cooling water heat exchanger outlet valves, SW 1424, SW 1429, and SW 1434. These are 16 inch butterfly valves that control the flow of service water through the heat exchangers. They are designed to fail open to assure adequate cooling water flow during accident conditions. One of these valves, SW 1434, stuck in the closed position during the September 6-7, 1987 event. Because the valves are used as throttle valves, flow conditions through the valves has created erosion/corrosion deterioration in the valve body which the licensee determined to have contributed to the

failure to operate on September 7, 1987. The licensee has replacement valve bodies on order and intends to replace them on an expedited basis. One valve that failed on September 6-7, 1987, is out of service pending replacement. Two of the valves are considered operable and satisfactory by the licensee for continued service based on performance history and leakage test results. All Technical Specification requirements for plant operation are satisifed with two valves available. The long term solution to this problem is still being evaluated by the licensee's engineering staff. As noted by the AIT Report, the licensee's approach to this problem appears to be acceptable.

The second item was the temperature controllers for the heat exchanger outlet valves. As noted by the AIT report, the controllers were found to be out of calibration during the September 6-7, 1987 event. The licensee determined that the controllers are susceptible to calibration problems as the service water temperature changes with seasonal conditions. The licensee has recalibrated the controllers and has an ongoing evaluation program managed by the system engineer. Any future improvements will be based on the results of the evaluation program. Again, the licensee's approach to this problem appears to be acceptable.

While passing through the Component Cooling Water Pump Room, the inspector noted that various CCW cables, piping, and instruments were wrapped in Kaowool. Kaowool is a fire protection material similar in appearance to asbestos cloth. Since this material covered items that require periodic calibration and maintenance, the system engineer was asked to explain the purpose for the fire protection covering. The System Engineer later explained that since all three system pumps and related controls are located in one room, the covering material was required to meet the separation and fire protection criteria of 10 CFR 50. When maintenance was required, the Kaowool was temporarily removed, then reinstalled following the work. The inspector expressed concern that plant personnel could not readily see the material condition of covered components. The licensee agreed, and stated that they have an ongoing program to evaluate alternate materials and methods to meet 10 CFR 50, Appendix R requirements. A detailed evaluation of this issue was not performed since it was considered beyond the scope of this inspection. However, subsequent discussion with a region based Fire Protection Inspector revealed that less than ideal maintainability may be a necessity to comply with fire protection requirements.

(2) Spent Fuel Pool Cooling Water

The accessible portions of the spent fuel pool cooling water system were walked down with the system engineer. At the time of the inspection, the system was out of service for maintenance, partially in preparation for the upcoming refueling outage. The ongoing work consisted of routine corrective maintenance items

such as flange gasket replacements, valve operator inspection and repair, and repacking of valves. During the walkdown, the inspector observed the maintenance activities in progress and reviewed the work packages for ongoing work and a sample of those for planned work.

The portion of the system not being worked on was found to be in good condition. No items requiring maintenance were identified by the inspector. The system engineer explained that all routine maintenance items were scheduled to be completed during the ongoing outage.

The inspector noted that the maintenance personnel were actively using the work instructions at the job site. The technical content of the work instructions was considered to be good.

One long term problem was identified during discussions with the system engineer. The spent fuel pool has developed leakage suspected to be coming from the welded joints in the pool stainless steel liner. This is an industry wide problem. The licensee has a program for evaluation and corrective action, consisting of inspection by divers and possible weld repair.

The exact details of the long term corrective action program are awaiting inspection results and engineering evaluation. Again, the licensee's approach to solving this problem appears to be acceptable.

(3) Main Feedwater System

The inspector walked down accessible portions of the main feedwater (MFW) system using piping and instrumentation drawings, M-006C, Main Feedwater System, M-007B, Steam Generator Secondary System, and M-006D, Auxiliary Feedwater System to assess the overall material condition of the MFW system. The inspector also used system procedures, SP-1106.07, Main Feedwater System, and SP-1106.20, Main Feed Pump and Turbine, during the course of the system walkdown.

The Main Feedwater System appeared to be well maintained as evident by the lack of major system leakage and a general good appearance of equipment. One overall system weakness was noted, namely, the material condition of the various 3/4 inch valves used in the system as vent, drain, instrument, and sampling isolation valves. These valves are often obscured from direct view and appeared to show indication of past packing leakage and were in need of cleaning and painting to raise their material condition to a point equal to the rest of the feedwater system. Other specific minor discrepancies with the material condition of the feedwater system were noted during the system walkdown and are briefly described below.

The following components did not have identification labels:

- PT-484
- FW-56
- FW-447
- FW-55

These components were discussed with the system engineer and proper corrective action was to be initiated.

The following components appeared to have minor leakage as noted and no maintenance information tags were hanging to show that the licensee had identified the leakage and initiated maintenance work orders:

- PSH-484 Blowdown Valve packing
- FW-482 outlet connection
- FW-64 leaking cap
- SS-31 packing leak
- SS-33 packing leak
- SP3BA packing leak
- FW-144

These conditions were discussed with the system engineer. The licensee intended to inspect the listed valves and to determine the extent of repairs necessary to correct the noted condition. The inspector emphasized that these leaks were minor but should be addressed before becoming larger. The licensee concurred.

Instrumentation tubing from FW-494 (Booster Feedwater Pump 1-2 suction pressure) and FW-436 (Booster Feedwater Pump 1-2 discharge pressure) to their associated instruments was found to be unsupported and badly bent. The clamps used to secure the sensing line were not properly fastened to the trays. The licensee stated that these deficiencies would be inspected and that proper corrective action would be initiated.

During the course of the walkdown of the main feedwater system, the inspector identified three feedwater valves that had been repaired by use of Furmanite. No maintenance information tags were hanging on the affected valves to indicate that actions to effect permanent repairs had been initiated. The licensee stated that when a leaking valve is temporarily repaired by Furmanite, a work request is immediately issued to ensure that permanent repairs are made to the valve. The inspectors discussed the use of Furmanite with licensee maintenance management personnel and were informed of procedure MP-1410.74.03, "Use and Control of On Line Leak Sealing." Step 9.1 of the procedure directs the licensee to prepare a follow-up maintenance work order (MWO) upon the completion of leak sealing work to ensure that permanent repairs are made. The inspectors reviewed the method used to accomplish the tracking of leak repair and were informed that an individual was assigned to monitor and track Furmanite

repairs and to ensure that all of these temporary repairs are subsequently replaced with permanent repairs. This tracking is accomplished through the use of a status board and computer printout, both of which list the identification of the repaired component, date of original temporary Furmanite repair, type of repair, MWO number, and date of scheduled permanent repair. All valves which have been repaired by the use of Furmanite are currently planned for permanent repairs during the upcoming refueling outage and are included on the refueling work schedule. This includes the three feedwater valves identified by the inspectors. Based on the above inspection findings, the licensee appeared to have adequate control of the use of Furmanite repairs at the facility.

B. Maintenance Backlog

Following the system walkdowns, the maintenance backlog was reviewed in detail with the system engineer for each system. This included the outstanding maintenance work orders (MWOs), the outstanding modifications, as well as other items of interest such as the Potential Condition Adverse to Quality (PCAQ) Reports, and maintenance work requests (MWRs). MWRs are items considered to require maintenance but for which an actual MWO has not been issued.

In general, the licensee's system for identifying the need for maintenance was considered acceptable based on the information obtained during the system walkdowns. All maintenance tags found in the plant were relatively recent. All tags found in the plant were readily traceable to a MWR or MWO. In some cases, it was noted that MWOs were listed in the licensee's tracking system, but no maintenance tag was found in the plant. Discussion with the Resident Inspectors indicated that recent industry inspection teams informed the licensee that too many tags were in the plant. Accordingly, the licensee has made an effort to reduce the number of tags in the plant and to use the MWO and MWR tracking system to track maintenance items.

The list of MWOs was reviewed for age of the item and appropriate priority for each of the four systems evaluated. The reasons for delay in accomplishing the work were reviewed and discussed briefly with the system engineer. In general, the inspectors considered that the licensee's tracking system was adequate. For items not being worked, the work priority seemed appropriate and reasons for delay seemed reasonable. No items were identified that were considered unreasonably old.

The inspectors also reviewed 67 completed MWOs associated with the main feedwater system. These MWOs were primarily concerned with the completion of preventative maintenance (PM) conducted on feedwater components during 1987. From this review the inspectors noted that several material problems were identified on various MWOs and discussed the resolution of the problems with the licensee. The system engineer responsible for the feedwater system appeared to be fully aware of the problems identified on the MWOs and had initiated

work requests for corrective actions. The licensee was also in the process of reviewing PM frequency in an attempt to increase the interval of performance and, thereby, reduce the overall work load.

An analysis of the MWO backlog for each system evaluated is provided in Attachments 1 through 4. As noted in the system walkdown section of this report, outstanding MWOs exist for replacement of the 16 inch butterfly valves on the service water outlet side of the component cooling water heat exchangers. Outstanding MWOs also exist for calibration of the component cooling water heat exchanger temperature controllers. This calibration is scheduled to be accomplished in conjunction with the valve replacement. The remaining MWO backlog consists of routine maintenance items and/or outstanding modifications scheduled for the upcoming outage. A MWO is typically issued to accomplish the installation of modifications.

The transition time from a MWR to MWO was noted to be variable due to the nature of a MWR. Upon review, some MWRs are cancelled if, for example, the proposed work is not considered necessary. Urgent required work, on the other hand, was noted to become a MWO in a relatively short time. In general, the inspectors found that disposition of MWRs was accomplished in a reasonable length of time.

When a problem is identified that may impact the safe operation of the facility, the licensee documents these concerns in a Potential Condition Adverse to Quality (PCAQ) Report. The licensee then uses the PCAQ and the MWO system to track the corrective action assigned to the PCAQ.

The open PCAQs for each of the four systems were evaluated with the system engineers. The number of maintenance related PCAQs was consistent with the identified problem areas for each system. The PCAQ system was found to be actively reviewed by licensee management. No items of concern were identified that did not have an ongoing plan of action.

Outstanding modifications, referred to by the licensee as Facility Change Requests (FCR) or Request for Modification (RFM), were reviewed with the system engineers for the four systems evaluated.

A total of sixty-six modifications are listed in the licensee's tracking system for the service water and component cooling water systems. This number includes proposed modifications, planned (budgeted) design improvements, as well as a significant number of changes that are essentially complete or cancelled with the paperwork in administrative closeout. For example, for modifications that require final drawing changes, the package remains open until all drawings are updated. In addition, if one modification is superseded by a change in concept, two modifications are listed in the tracking system for administrative and historical tracking purposes. Thirty-seven FCRs were noted to be 1985 vintage and

earlier. These were discussed in detail with the system engineer. Twenty-five of these modifications are essentially complete or voided. The others are low priority maintenance improvement items or paper changes. No items were identified by the inspector as being potentially safety significant.

The delay in closeout of the older modification packages was discussed with the licensee. This delay was previously identified as a violation in Report No. 50-346-85031. The licensee stated that the delay was due to a previous lack of aggressive management attention. The licensee has a current commitment to closeout 450 of the plant's modifications by the end of the upcoming refueling outage. In addition, the licensee stated that revised procedures with dedicated staff personnel have been implemented for modification tracking and control.

The remaining post-1985 modifications involve system improvements aimed at increasing reliability and maintainability. The licensee's schedule for implementation was considered reasonable by the inspectors.

Only one outstanding modification is listed in the licensee's tracking system for the spent fuel pool cooling water system. This modification adds some isolation valves to improve system maintainability. This modification is tentatively scheduled for the system outage estimated to be some time in late 1988.

A review of the PCAQs for the spent fuel pool cooling system was also conducted with the system engineer. No items of continuing concern were identified during this discussion. The leaking spent fuel pool welds were also discussed. Currently, the licensee's program consists of an accelerated leakage monitoring program to be supplemented by additional inspections and engineering evaluation. A long term corrective action program has not yet been formulated. The inspector considers that the licensee's approach to this problem is reasonable.

During the Main Feedwater System walkdown, the inspector noted that level transmitters and level sight glasses between the Dearator Heater and the Dearator Storage Tank had no lateral support and were simply suspended from the heater down approximately 30 feet to the storage tank. The piping was continually vibrating in the lateral direction approximately one half to one inch in each direction. The inspector also noted that the heater drain lines going to both Dearator Heaters appeared to have excessive movement due to inadequate support.

Both items were discussed with the licensee. The inspector was informed that the level transmitter movement had been evaluated and determined to be necessary and not considered excessive. The licensee stated that the freedom of movement was necessary because of the thermal expansion that is experienced between the Dearator Heater and the Dearator Storage Tank.

The licensee also produced a FCR regarding the movement of the heater drain lines which stated that the movement was due to the flashing of heater drain water in the line caused by the throttling of flow by regulating valves upstream of the Dearator Heater. The FCR recommended relocating the regulating valves closer to the Dearator Heater, thereby reducing the flashing in the line and the resulting line movement. This modification is tentatively scheduled for the sixth refueling outage. The inspector also reviewed other FCRs relating to the Main Feedwater system and found that a current status of each FCR appeared to be readily available from a computer data base. Although time did not permit a detailed review of the outstanding FCRs for the main feedwater system, the inspector reviewed the list of 40 system FCRs with the system engineer. Thirty of these are completed. Of the remaining ten listed as active, all are complete and in administrative closure or suspended. No items of safety significance were identified.

4. Personnel Interviews

An objective of this inspection included the identification of significant perceptions of the Davis-Besse maintenance program by those directly involved in maintenance. Toward this end, the inspectors interviewed three members of the Operations Department, the Preventive Maintenance Specialist of the Maintenance Planning Department, and twenty members of the Maintenance Department. Personnel from the Maintenance Department that were interviewed included Instrumentation and Controls Shop Superintendent, the Electrical Shop Superintendent, the Mechanical Shop Superintendent, seven foremen (including at least two from each shop), and ten craftsmen and/or apprentices (consisting of at least three from each shop).

Regarding equipment problems, the operators stated that the station radiation monitors for containment and station ventilation systems were unreliable. They also noted that the main feedwater flow control valves did not control well during low flow conditions. The inspectors noted that these problems are somewhat universal and not unique to the Davis-Besse plant. The operators stated that licensee maintenance personnel were aware of these problems and that they respond to operational problems in a timely manner.

The paramount perception obtained during the interviews with maintenance staff personnel was that the overall maintenance program was better than it was in 1985. For example, the consensus was that the maintenance department was functioning better, the planning efforts were more effective with respect to coordinating all related activities including the assuring that needed materials were available and that the planning documents usually included all of the information required to perform the job. This consensus notwithstanding, some maintenance staff members indicated that certain aspects of the Davis-Besse maintenance program had deteriorated and others felt that the Maintenance Department, per se, was not functioning as well as it had in the past. The more salient perceptions in this regard are highlighted below:

- Unavailability of Standard Stock Parts - Work has been delayed and workers have become frustrated because of the unavailability of standard stock parts (e.g., nuts, bolts, lugs, screws, washers, small pipe fittings, electrical boxes, condulets, conduit, electrical tape).

- Need for Communications Improvement - Improved communications are needed within the various Maintenance Planning Department Sections (e.g., the Mechanical, Electrical, and I&C Planning Sections) and with the corresponding maintenance shops to assure that the MWOs account for "as-built" conditions of the affected systems and to assure that any needed support to the primary maintenance shop by another shop is accounted for in the planning documents.

- Excessive Paperwork - The planning documents for certain maintenance jobs, but especially the smaller and more straightforward jobs, require excessive review by the foreman in determining which documents are actually required to control the job. As a result, the foremen are not spending as much time in the field as they would like.

- Continuous Coverage - The continuous coverage program (i.e., the 24-hours a day, 7-days a week, including weekends and holidays, staffing by all maintenance shops) has reduced day shift manning and has made manpower planning more complicated for the foremen, thereby reducing the time they can spend in the field.

- Use of Contract Craftsmen - All of the maintenance shops use contractor supplied craftsmen to assist in handling the normal workload. Most maintenance personnel interviewed believe they would fall behind without the use of contract craftsmen; however, they believe it would be more advantageous to Davis-Besse to replace them with company craftsmen. In addition, the I&C shop personnel feel the qualification process for apprentices is hampered because apprentices must often work with contract craftsmen, but get no credit for on-the-job training performed under the auspices of contract craftsmen.

The above perceptions were discussed during the course of the inspection with Mr. Neal Bonner, Assistant Plant Manager for Maintenance. Mr. Bonner was aware of most of these concerns and indicated that corrective efforts are either underway or being planned to resolve most of these items. He was not, however, aware of the "excessive paperwork" concern, nor of the communications problems. The above discussion led to a discussion of the licensee's recent assessment of the maintenance department by an industry peer group. This assessment is discussed in Section 5 of this report.

5. Maintenance Self Assessment

An assessment of the Davis-Besse maintenance program was performed during 1987 by an industry peer group using established industry guidelines. A detailed evaluation of the maintenance program was beyond

the scope of this inspection; therefore, the discussion with the licensee was limited to an overview of significant problems identified and verification that the licensee was proceeding with corrective action plans.

The more significant findings by the assessment team involved the licensee's equipment data base, trending analysis, machinery history, and root cause analysis programs. These are considered programmatic weaknesses that could adversely impact the effectiveness and efficiency of maintenance activities but which appear to have a minor impact on operational safety.

Two findings of concern previously identified by the NRC and confirmed by the team are: (1) the size of the maintenance work order backlog, and (2) the lack of spare parts to support maintenance work. The MWO backlog of the four systems evaluated is documented in Section 3 of this report. Regarding the lack of spare parts, the licensee has ongoing programs to improve parts availability. The review of the maintenance backlog for the four systems as well as the outstanding modifications found only a few instances where the lack of parts was potentially safety significant. In each of these instances, the licensee's action plan was found to be reasonable.

Exit Interview

An exit interview was conducted on November 6, 1987. The results of the inspection were discussed with the licensee. The licensee subsequently stated that the information discussed contained no proprietary information.

ATTACHMENT 1

SERVICE WATER
MAINTENANCE WORK ORDER ANALYSIS

AGE: All less than 18 months old, the majority of which are less than 90 days old.

PRIORITY REVIEW: Low of Priority 6 and a high of Priority 3; considered appropriate by the inspectors.

BACKLOG ANALYSIS: Reason given why item is not being worked:

	Number of Work Orders
Parts	18
Planning/Engineering/Administration	26
Plant Conditions	2
Review/Testing	2
	48 Total

ACTIVITY REVIEW: Type of maintenance required.

	Number of Work Orders
Hanger discrepancies (CM)	6
Snubber replacements (PM)	10
Routine corrective maintenance (packing leaks, missing handwheel nuts, stripped threads, etc.).	15
Modifications to wiring for motor operated valve indicating lights (long term fix).	8
Preventive maintenance items	5
SW 1434 and related valve problems	4
	48 Total

ATTACHMENT 2

COMPONENT COOLING WATER
MAINTENANCE WORK ORDER ANALYSIS

AGE: All less than 18 months old with the majority less than 90 days old.

PRIORITY REVIEW: Low of Priority 6 to a high of Priority 3; considered appropriate by the inspectors.

BACKLOG ANALYSIS: The reason given why the item is not being worked:

	Number of Work Orders
Parts	15
Planning/Engineering/Administration	41
Plant Conditions	14
Review/Testing	1
	71 Total

ACTIVITY REVIEW: Type of maintenance required.

	Number of Work Orders
Hanger discrepancies	15
Hydraulic snubber replacements (preventive maintenance)	11
Routine corrective maintenance	23
Modifications to wiring for motor operated valve indicating lights. Long term fix.	16
Temperature controller for CCW Hx valves calibration	3
Other preventive maintenance items	3
	71 Total

ATTACHMENT 3

SPENT FUEL POOL
COOLING WATER
MAINTENANCE WORK ORDER ANALYSIS

Since the system was out of service for maintenance, the evaluation was limited to identifying items that would not be complete by the end of the current outage.

The system engineer stated that no known items would remain open following the current outage. It was recognized that this comment excluded any new items identified during post repair testing or low priority items that do not affect the operational readiness of the system.

ATTACHMENT 4

MAIN FEEDWATER SYSTEM
MAINTENANCE WORK ORDER ANALYSIS

AGE: All less than 18 months old with the majority less than 90 days old.

PRIORITY REVIEW: Low Priority of 6 to a high of Priority 3; considered appropriate by the inspectors.

BACKLOG ANALYSIS: The reason given why the item was not being worked:

	Number of Work Orders
Parts	9
Planning/Engineering/Administration	16
Plant Conditions	22
	47 Total

ACTIVITY REVIEW: Type of maintenance

	Number of Work Orders
Routine Corrective Maintenance	30
System Improvements	5
Preventive Maintenance	12
	47 Total