4.4.4.4 Acceptance Criteria

a. As used in this Specification

1. See insert page

2. Imperfection means an exception to the dimensions, finish, or contour of a tube from that required by fabrication drawings or specifications. Eddy-current testing indications below 20% of the nominal tube wall thickness, if detectable, may be considered as imperfections.

3. Degradation means a service-induced cracking, wastage, wear, or general corrosion occurring on either inside or outside of a tube.

4. Degraded Tube means a tube containing imperfections greater than or equal to 20% of the nominal wall thickness caused by degradation.

5. % Degradation means the percentage of the tube wall thickness affected or removed by degradation.

6. Defect means an imperfection of such severity that it exceeds the plugging limit or repair. A tube containing a defect is defective.

7. See insert page

~~Plugging limit means the imperfection depth at or beyond which the tube shall be removed from service and is equal to 40% of the nominal tube wall thickness.~~

8. Unserviceable describes the condition of a tube if it leaks or contains a defect large enough to affect its structural integrity in the event of an Operating Basis Earthquake, a loss-of-coolant accident, or a steam line or feedwater line break as specified in 4.4.4 3c., above.

9. Tube Inspection means an inspection of the steam generator tube from the point of entry (hot leg side) completely around the U-bend to the top support of the cold leg.

10. Preservice Inspection means an inspection of the full length of each tube in each steam generator performed by eddy current techniques prior to service to establish a baseline

11. See insert page

INSERTS TO PAGE 3/4 4-14

1. Tubing or Tube means that portion of the tube or sleeve which forms the primary system to secondary system pressure boundary.

7. Plugging or Repair Limit means the imperfection depth at or beyond which the tube shall be removed from service by plugging or repaired by sleeving in the affected area. The plugging or repair imperfection depths are specified in percentage of nominal wall thickness as follows:

| | |
|---|---|
| a. Original tube wall | 40% |
| b. ABB-CE Leak Tight Sleeves | 35% |

11. Tube Repair refers to welded sleeving as described in ABB Combustion Engineering Report CEN-613-P "Palo Verde Units 1, 2, and 3 Steam Generator Tube Repair using Leak Tight Sleeves" Rev 01 dated January 1995 which is used to maintain a tube in service or return a tube to service. This includes the removal of plugs that were installed as a corrective or preventative measure. A tube inspection per Specification 4.4.4.4.a.9 is required prior to returning previously plugged tubes to service.

SURVEILLANCE REQUIREMENTS (Continued)

condition of the tubing. This inspection was performed prior to the field hydrostatic test and prior to initial POWER OPERATION using the equipment and techniques expected to be used during subsequent inservice inspections.

b. The steam generator shall be determined OPERABLE after completing the corresponding actions (plug or repair all tubes exceeding the plugging or repair limit and all tubes containing through-wall cracks) required by Table 4.4-2. Defective tubes may be repaired in accordance with ABB Combustion Engineering Report CEN-613-P, "Arizona Public Service Co. Palo Verde Units 1, 2 and 3 Steam Generator Tube Repair Using Leak Tight Sleeves" Rev. 01 dated January 1995.

4.4.4.5 Reports

a. Within 15 days following the completion of each inservice inspection of steam generator tubes, the number of tubes plugged or repaired in each steam generator shall be reported to the Commission in a Special Report pursuant to Specification 6.9.2.

b. The complete results of the steam generator tube inservice inspection shall be submitted to the Commission in a Special Report pursuant to Specification 6.9.2 within 12 months following completion of the inspection. This Special Report shall include:

1. Number and extent of tubes inspected.

2. Location and percent of wall-thickness penetration for each indication of an imperfection.

3. Identification of tubes plugged or repaired.

c. Results of steam generator tube inspections which fall into Category C-3 shall be reported in a Special Report to the Commission pursuant to Specification 6.9.2 within 30 days and prior to resumption of plant operation and shall provide a description of investigations conducted to determine cause of the tube degradation and corrective measures taken to prevent recurrence.

## TABLE 4.4-2

## STEAM GENERATOR TUBE INSPECTION

| 1ST SAMPLE INSPECTION | | | 2ND SAMPLE INSPECTION | | 3RD SAMPLE INSPECTION | |
|---|---|---|---|---|---|---|
| Sample Size | Result | Action Required | Result | Action Required | Result | Action Required |
| A minimum of S Tubes per S. G. | C-1 | None | N. A. | N. A. | N. A. | N. A. |
| | C-2 | Plug or repair defective tubes and inspect additional 2S tubes in this S. G. | C-1 | None or repair | N. A. | N. A. |
| | | | C-2 | Plug or repair defective tubes and inspect additional 4S tubes in this S. G. | C-1 | None or repair |
| | | | | | C-2 | Plug or repair defective tubes |
| | | | | | C-3 | Perform action for C-3 result of first sample |
| | | | C-3 | Perform action for C-3 result of first sample | N. A. | N. A. |
| | C-3 | Inspect all tubes or repair in this S. G., plug or repair defective tubes and inspect 2S tubes in each other S. G.<br><br>Notification to NRC pursuant to §50.72 (b)(2) of 10 CFR Part 50 | All other S. G.s are C-1 | None | N. A. | N. A. |
| | | | Some S. G.s C-2 but no additional S. G. are C-3 | Perform action for C-2 result of second sample | N. A. | N. A. |
| | | | Additional S. G. is C-3 | Inspect all tubes in each S. G. and plug or repair defective tubes. Notification to NRC pursuant to §50.72 (b)(2) of 10 CFR Part 50 | N. A. | N. A. |

$S = 3\frac{N}{n}\%$ Where N is the number of steam generators in the unit, and n is the number of steam generators inspected during an inspection

3/4.4.4 STEAM GENERATORS

The surveillance requirements for inspection of the steam generator tubes ensure that the structural integrity of this portion of the RCS will be maintained. The program for inservice inspection of steam generator tubes is based on a modification of Regulatory Guide 1.83, Revision 1. Inservice inspection of steam generator tubing is essential in order to maintain surveillance of the conditions of the tubes in the event that there is evidence of mechanical damage or progressive degradation due to design, manufacturing errors, or inservice conditions that lead to corrosion.

Inservice inspection of steam generator tubing also provides a means of characterizing the nature and cause of any tube degradation so that corrective measures can be taken.

The plant is expected to be operated in a manner such that the secondary coolant will be maintained within those chemistry limits found to result in negligible corrosion of the steam generator tubes. If the secondary coolant chemistry is not maintained within these limits, localized corrosion may likely result in stress corrosion cracking. The extent of cracking during plant operation would be limited by the limitation of steam generator tube leakage between the primary coolant system and the secondary coolant system (primary-to-secondary leakage = 0.5 gpm per steam generator). Cracks having a primary-to-secondary leakage less than this limit during operation will have an adequate margin of safety to withstand the loads imposed during normal operation and by postulated accidents. Operating plants have demonstrated that primary-to-secondary leakage of 0.5 gpm per steam generator can readily be detected by radiation monitors of steam generator blowdown. Leakage in excess of this limit will require plant shutdown and an unscheduled inspection, during which the leaking tubes will be located and plugged, or repaired.

Wastage-type defects are unlikely with proper chemistry treatment of the secondary coolant. However, even if a defect should develop in service, it will be found during scheduled inservice steam generator tube examinations. Plugging or repair will be required for all tubes with imperfections exceeding the plugging limit or repair of 40% of the tube nominal wall thickness. Steam generator tube inspections of operating plants have demonstrated the capability to reliably detect degradation that has penetrated 20% of the original tube wall thickness. (Insert 2)

Whenever the results of any steam generator tubing inservice inspection fall into Category C-?, these results will be promptly reported to the Commission pursuant to Specification 6.9.1 prior to the resumption of plant operation. Such cases will be considered by the Commission on a case-by-case basis and may result in a requirement for analysis, laboratory examinations, tests, additional eddy-current inspection, and revision of the Technical Specifications, if necessary.

(Insert 1) Defective tubes may be repaired in accordance with ABB Combustion Engineering Report CEN-613-P, "Arizona Public Service Co. Palo Verde Units 1, 2, and 3 Steam Generator Tube Repair Using Leak Tight Sleeves" Rev. 01 dated January 1995.

(Insert 2) Repaired tubes will be included in the periodic tube inspections for the inservice inspection programs.

SURVEILLANCE REQUIREMENTS (Continued)

4.4.4.4 Acceptance Criteria

a. As used in this Specification

1. See insert page

2 &. Imperfection means an exception to the dimensions, finish, or contour of a tube from that required by fabrication drawings or specifications. Eddy-current testing indications below 20% of the nominal tube wall thickness, if detectable, may be considered as imperfections.

3 &. Degradation means a service-induced cracking, wastage, wear, or general corrosion occurring on either inside or outside of a tube.

4 &. Degraded Tube means a tube containing imperfections greater than or equal to 20% of the nominal wall thickness caused by degradation.

5 &. % Degradation means the percentage of the tube wall thickness affected or removed by degradation.

6 &. Defect means an imperfection of such severity that it exceeds the plugging limit or repair. A tube containing a defect is defective.

7 &. See insert page

~~Plugging Limit means the imperfection depth at or beyond which the tube shall be removed from service and is equal to 40% of the nominal tube wall thickness.~~

8 &. Unserviceable describes the condition of a tube if it leaks or contains a defect large enough to affect its structural integrity in the event of an Operating Basis Earthquake, a loss-of-coolant accident, or a steam line or feedwater line break as specified in 4.4.4.3c., above.

9 &. Tube Inspection means an inspection of the steam generator tube from the point of entry (hot leg side) completely around the U-bend to the top support of the cold leg.

10 &. Preservice Inspection means an inspection of the full length of each tube in each steam generator performed by eddy current techniques prior to service to establish a baseline

11. See insert page

INSERTS TO PAGE 3/4 4-14

1. Tubing or Tube means that portion of the tube or sleeve which forms the primary system to secondary system pressure boundary.

7. Plugging or Repair Limit means the imperfection depth at or beyond which the tube shall be removed from service by plugging or repaired by sleeving in the affected area. The plugging or repair imperfection depths are specified in percentage of nominal wall thickness as follows:

| | |
|---|---|
| a. Original tube wall | 40% |
| b. ABB-CE Leak Tight Sleeves | 35% |

11. Tube Repair refers to welded sleeving as described in ABB Combustion Engineering Report CEN-613-P "Palo Verde Units 1, 2, and 3 Steam Generator Tube Repair using Leak Tight Sleeves" Rev 01 dated January 1995 which is used to maintain a tube in service or return a tube to service. This includes the removal of plugs that were installed as a corrective or preventative measure. A tube inspection per Specification 4.4.4.4.a.9 is required prior to returning previously plugged tubes to service.

condition of the tubing. This inspection was performed prior to the field hydrostatic test and prior to initial POWER OPERATION using the equipment and techniques expected to be used during subsequent inservice inspections.

b. The steam generator shall be determined or repair OPERABLE after completing the corresponding actions (plug all tubes exceeding the plugging, or repair limit and all tubes containing through-wall cracks) required by Table 4.4-2. Defective tubes may be repaired in accordance with ABB Combustion Engineering Report CEN-613-P, "Arizona Public Service Co. Palo Verde Units 1, 2, and 3 Steam Generator Tube Repair Using Leak Tight Sleeves" Rev. 01 dated January 1995.

4.4.4.5 Reports

a. Within 15 days following the completion of each inservice inspection of steam generator tubes, the number of tubes plugged in each steam generator shall be reported to the Commission in a Special Report or repaired pursuant to Specification 6.9.2.

b. The complete results of the steam generator tube inservice inspection shall be submitted to the Commission in a Special Report pursuant to Specification 6.9.2 within 12 months following completion of the inspection. This Special Report shall include:

1. Number and extent of tubes inspected.

2. Location and percent of wall-thickness penetration for each indication of an imperfection.

3. Identification of tubes plugged, or repaired.

c. Results of steam generator tube inspections which fall into Category C-3 shall be reported in a Special Report to the Commission pursuant to Specification 6.9.2 within 30 days and prior to resumption of plant operation and shall provide a description of investigations conducted to determine cause of the tube degradation and corrective measures taken to prevent recurrence.

## TABLE 4.4-2

## STEAM GENERATOR TUBE INSPECTION

| 1ST SAMPLE INSPECTION | | | 2ND SAMPLE INSPECTION | | 3RD SAMPLE INSPECTION | |
|---|---|---|---|---|---|---|
| Sample Size | Result | Action Required | Result | Action Required | Result | Action Required |
| A minimum of S Tubes per S. G. | C-1 | None | N. A. | N. A. | N. A. | N. A. |
| | C-2 | Plug or repair defective tubes and inspect additional 2S tubes in this S. G. | C-1 | None or repair | N. A. | N. A. |
| | | | C-2 | Plug defective tubes and inspect additional 4S tubes in this S. G. | C-1 | None or repair |
| | | | | | C-2 | Plug defective tubes |
| | | | | | C-3 | Perform action for C-3 result of first sample |
| | | or repair | C-3 | Perform action for C-3 result of first sample | N. A. | N. A. |
| | C-3 | Inspect all tubes in this S. G., plug or repair defective tubes and inspect 2S tubes in each other S. G. Notification to NRC pursuant to §50.72 (b)(2) of 10 CFR Part 50 | All other S. G.s are C-1 | None | N. A. | N. A. |
| | | | Some S. G.s C-2 but no additional S. G. are C-3 | Perform action for C-2 result of second sample | N. A. | N. A. |
| | | | Additional S. G. is C-3 | Inspect all tubes in each S. G. and plug or repair defective tubes. Notification to NRC pursuant to §50.72 (b)(2) of 10 CFR Part 50 | or repair N. A. | N. A. |

$S = 3\frac{N}{n}\%$ Where N is the number of steam generators in the unit, and n is the number of steam generators inspected during an inspection

REACTOR COOLANT SYSTEM

BASES

3/4.4.4 STEAM GENERATORS

The surveillance requirements for inspection of the steam generator tubes ensure that the structural integrity of this portion of the RCS will be maintained. The program for inservice inspection of steam generator tubes is based on a modification of Regulatory Guide 1.83, Revision 1. Inservice inspection of steam generator tubing is essential in order to maintain surveillance of the conditions of the tubes in the event that there is evidence of mechanical damage or progressive degradation due to design, manufacturing errors, or inservice conditions that lead to corrosion.

Inservice inspection of steam generator tubing also provides a means of characterizing the nature and cause of any tube degradation so that corrective measures can be taken.

The plant is expected to be operated in a manner such that the secondary coolant will be maintained within those chemistry limits found to result in negligible corrosion of the steam generator tubes. If the secondary coolant chemistry is not maintained within these limits, localized corrosion may likely result in stress corrosion cracking. The extent of cracking during plant operation would be limited by the limitation of steam generator tube leakage between the primary coolant system and the secondary coolant system (primary-to-secondary leakage = 0.5 gpm per steam generator). Cracks having a primary-to-secondary leakage less than this limit during operation will have an adequate margin of safety to withstand the loads imposed during normal operation and by postulated accidents. Operating plants have demonstrated that primary-to-secondary leakage of 0.5 gpm per steam generator can readily be detected by radiation monitors of steam generator blowdown. Leakage in excess of this limit will require plant shutdown and an unscheduled inspection, during which the leaking tubes will be located and plugged or repaired.

Wastage-type defects are unlikely with proper chemistry treatment of the secondary coolant. However, even if a defect should develop in service, it will be found during scheduled inservice steam generator tube examinations. Plugging or repair will be required for all tubes with imperfections exceeding the plugging limit of 40% of the tube nominal wall thickness or repair. Steam generator tube inspections of operating plants have demonstrated the capability to reliably detect degradation that has penetrated 20% of the original tube wall thickness. (Insert 2)

Whenever the results of any steam generator tubing inservice inspection fall into Category C-3, these results will be promptly reported to the Commission pursuant to Specification 6.9.1 prior to the resumption of plant operation. Such cases will be considered by the Commission on a case-by-case basis and may result in a requirement for analysis, laboratory examinations, tests, additional eddy-current inspection, and revision of the Technical Specifications, if necessary.

(Insert 1) → Defective tubes may be repaired in accordance with ABB Combustion Engineering Report CEN-613-P, "Arizona Public Service Co. Palo Verde Units 1, 2, and 3 Steam Generator Tube Repair Using Leak Tight Sleeves" Rev. 01 dated January 1995.

(Insert 2) → Repaired tubes will be included in the periodic tube inspections for the inservice inspection program.

SURVEILLANCE REQUIREMENTS (Continued)

4.4.4.4 Acceptance Criteria

a. As used in this Specification

1. see insert page

2. Imperfection means an exception to the dimensions, finish, or contour of a tube from that required by fabrication drawings or specifications. Eddy-current testing indications below 20% of the nominal tube wall thickness, if detectable, may be considered as imperfections.

3. Degradation means a service-induced cracking, wastage, wear, or general corrosion occurring on either inside or outside of a tube.

4. Degraded Tube means a tube containing imperfections greater than or equal to 20% of the nominal wall thickness caused by degradation.

5. % Degradation means the percentage of the tube wall thickness affected or removed by degradation.

6. Defect means an imperfection or repair of such severity that it exceeds the plugging limit. A tube containing a defect is defective.

7. see insert page

~~Plugging Limit means the imperfection depth at or beyond which the tube shall be removed from service and is equal to 40% of the nominal tube wall thickness.~~

8. Unserviceable describes the condition of a tube if it leaks or contains a defect large enough to affect its structural integrity in the event of an Operating Basis Earthquake, a loss-of-coolant accident, or a steam line or feedwater line break as specified in 4.4.4.3c., above.

9. Tube Inspection means an inspection of the steam generator tube from the point of entry (hot leg side) completely around the U-bend to the top support of the cold leg.

10. Preservice Inspection means an inspection of the full length of each tube in each steam generator performed by eddy current techniques prior to service to establish a baseline

11. see insert page

INSERTS TO PAGE 3/4 4-14

1. Tubing or Tube means that portion of the tube or sleeve which forms the primary system to secondary system pressure boundary.

7. Plugging or Repair Limit means the imperfection depth at or beyond which the tube shall be removed from service by plugging or repaired by sleeving in the affected area. The plugging or repair imperfection depths are specified in percentage of nominal wall thickness as follows:

| | |
|---|---|
| a. Original tube wall | 40% |
| b. ABB-CE Leak Tight Sleeves | 35% |

11. Tube Repair refers to welded sleeving as described in ABB Combustion Engineering Report CEN-613-P "Palo Verde Units 1, 2, and 3 Steam Generator Tube Repair using Leak Tight Sleeves" Rev 01 dated January 1995 which is used to maintain a tube in service or return a tube to service. This includes the removal of plugs that were installed as a corrective or preventative measure. A tube inspection per Specification 4.4.4.4.a.9 is required prior to returning previously plugged tubes to service.

SURVEILLANCE REQUIREMENTS (Continued)

condition of the tubing. This inspection was performed prior to the field hydrostatic test and prior to initial POWER OPERATION using the equipment and techniques expected to be used during subsequent inservice inspections.

b. The steam generator shall be determined OPERABLE after completing the corresponding actions (plug or repair all tubes exceeding the plugging limit and all tubes containing through-wall cracks) required by Table 4.4-2. Defective tubes may be repaired in accordance with ABB Combustion Engineering Report CEN-613-P, "Arizona Public Service Co. Palo Verde Units 1, 2, and 3 Steam Generator Tube Repair Using Leak Tight Sleeves" Rev. 01 dated January 1995.

4.4.4.5 Reports

a. Within 15 days following the completion of each inservice inspection of steam generator tubes, the number of tubes plugged or repaired in each steam generator shall be reported to the Commission in a Special Report pursuant to Specification 6.9.2.

b. The complete results of the steam generator tube inservice inspection shall be submitted to the Commission in a Special Report pursuant to Specification 6.9.2 within 12 months following completion of the inspection. This Special Report shall include:

1. Number and extent of tubes inspected.

2. Location and percent of wall-thickness penetration for each indication of an imperfection.

3. Identification of tubes plugged or repaired.

c. Results of steam generator tube inspections which fall into Category C-3 shall be reported in a Special Report to the Commission pursuant to Specification 6.9.2 within 30 days and prior to resumption of plant operation and shall provide a description of investigations conducted to determine cause of the tube degradation and corrective measures taken to prevent recurrence.

# TABLE 4.4-2

## STEAM GENERATOR TUBE INSPECTION

| 1ST SAMPLE INSPECTION | | | 2ND SAMPLE INSPECTION | | 3RD SAMPLE INSPECTION | |
|---|---|---|---|---|---|---|
| Sample Size | Result | Action Required | Result | Action Required | Result | Action Required |
| A minimum of S Tubes per S. G. | C-1 | None | N. A. | N. A. | N. A. | N. A. |
| | C-2 | Plug defective tubes or repair and inspect additional 2S tubes in this S. G. | C-1 | None or repair | N. A. | N. A. |
| | | | C-2 | Plug defective tubes and inspect additional 4S tubes in this S. G. | C-1 | None or repair |
| | | | | | C-2 | Plug defective tubes |
| | | | | | C-3 | Perform action for C-3 result of first sample |
| | | | C-3 | Perform action for C-3 result of first sample | N. A. | N. A. |
| | C-3 | Inspect all tubes in this S. G., plug or repair defective tubes and inspect 2S tubes in each other S. G.<br><br>Notification to NRC pursuant to §50.72 (b)(2) of 10 CFR Part 50 | All other S. G.s are C-1 | None | N. A. | N. A. |
| | | | Some S. G.s C-2 but no additional S. G. are C-3 | Perform action for C-2 result of second sample | N. A. | N. A. |
| | | | Additional S. G. is C-3 | Inspect all tubes in each S. G. and plug or repair defective tubes. Notification to NRC pursuant to §50.72 (b)(2) of 10 CFR Part 50 | N. A. | N. A. |

$S = 3\frac{N}{n}\%$ Where N is the number of steam generators in the unit, and n is the number of steam generators inspected during an inspection

## 3/4.4.4 STEAM GENERATORS

The surveillance requirements for inspection of the steam generator tubes ensure that the structural integrity of this portion of the RCS will be maintained. The program for inservice inspection of steam generator tubes is based on a modification of Regulatory Guide 1.83, Revision 1. Inservice inspection of steam generator tubing is essential in order to maintain surveillance of the conditions of the tubes in the event that there is evidence of mechanical damage or progressive degradation due to design, manufacturing errors, or inservice conditions that lead to corrosion.

Inservice inspection of steam generator tubing also provides a means of characterizing the nature and cause of any tube degradation so that corrective measures can be taken.

The plant is expected to be operated in a manner such that the secondary coolant will be maintained within those chemistry limits found to result in negligible corrosion of the steam generator tubes. If the secondary coolant chemistry is not maintained within these limits, localized corrosion may likely result in stress corrosion cracking. The extent of cracking during plant operation would be limited by the limitation of steam generator tube leakage between the primary coolant system and the secondary coolant system (primary-to-secondary leakage = 0.5 gpm per steam generator). Cracks having a primary-to-secondary leakage less than this limit during operation will have an adequate margin of safety to withstand the loads imposed during normal operation and by postulated accidents. Operating plants have demonstrated that primary-to-secondary leakage of 0.5 gpm per steam generator can readily be detected by radiation monitors of steam generator blowdown. Leakage in excess of this limit will require plant shutdown and an unscheduled inspection, during which the leaking tubes will be located and plugged, or repaired.

Wastage-type defects are unlikely with proper chemistry treatment of the secondary coolant. However, even if a defect should develop in service, it will be found during scheduled inservice steam generator tube examinations. Plugging, or repair will be required for all tubes with imperfections exceeding the plugging limit of 40% of the tube nominal wall thickness. Steam generator tube inspections of or repair operating plants have demonstrated the capability to reliably detect degradation that has penetrated 20% of the original tube wall thickness. (Insert 2)

Whenever the results of any steam generator tubing inservice inspection fall into Category C-3, these results will be promptly reported to the Commission pursuant to Specification 6.9.1 prior to the resumption of plant operation. (Insert 1) Such cases will be considered by the Commission on a case-by-case basis and may result in a requirement for analysis, laboratory examinations, tests, additional eddy-current inspection, and revision of the Technical Specifications, if necessary.

(Insert 1) Defective tubes may be repaired in accordance with ABB Combustion Engineering Report CEN-613-P, "Arizona Public Service Co. Palo Verde Units 1,2, and 3 Steam Generator Tube Repair Using Leak Tight Sleeves" Rev. 01 dated January 1995.

(Insert 2) Repaired tubes will be included in the periodic tube inspections for the inservice inspection program.

# ATTACHMENT 2

# COMBUSTION ENGINEERING, INC.

# REPORT CEN-613-P REVISION 01

# DATED JANUARY 1995

# ARIZONA PUBLIC SERVICE CO.

# PALO VERDE UNITS 1, 2, AND 3

# STEAM GENERATOR TUBE REPAIR USING LEAK TIGHT SLEEVES

# FINAL REPORT

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