

830 Power Building
TENNESSEE VALLEY AUTHORITY
CHATTANOOGA, TENNESSEE 37401

OCT 12 1977

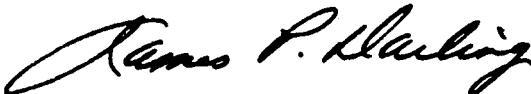
Mr. James P. O'Reilly, Director
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Region II - Suite 1217
230 Peachtree Street, NW.
Atlanta, Georgia 30303

Dear Mr. O'Reilly:

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2 - REPORTABLE DEFICIENCY - CHICAGO
BRIDGE AND IRON SUPPORTS FOR CONTAINMENT SPRAY SYSTEM AND RESIDUAL HEAT
REMOVAL SPRAY SYSTEM PIPING - MATERIAL CERTIFICATION, INSTALLATION AND
INSPECTION DOCUMENTATION

The subject deficiency was initially reported to NRC-OIE Region II,
Inspector V. L. Brownlee, on April 27, 1977, in accordance with
10 CFR 50.55(e) and our first interim report was transmitted to
your office on May 27, 1977. Enclosed is our final report on this
deficiency.

Very truly yours,


J. E. Gilleland
for Assistant Manager of Power

Enclosure

cc: Dr. Ernst Volgenau, Director (Enclosure)
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, DC 20555

MA 1
GD

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2
REPORTABLE DEFICIENCY
CHICAGO BRIDGE AND IRON COMPANY
CBI SUPPORTS FOR CONTAINMENT SPRAY SYSTEM
AND RESIDUAL HEAT REMOVAL SPRAY SYSTEM PIPING
MATERIAL CERTIFICATION, INSTALLATION, AND INSPECTION DOCUMENTATION

FINAL REPORT

Introduction

The Watts Bar Construction Quality Assurance Unit audited Chicago Bridge and Iron's (CBI) field work and TVA's surveillance of CBI activities from February 14 to March 14, 1977. During this audit, a deficiency was discovered in the installation and inspection documentation of the containment spray header supports. These supports attach to the residual heat removal and containment spray system piping; these systems are safety-related. CBI drawings 215 through 218 and 430 through 436 provide the detail designs of the spray header supports. This deficiency was forwarded to the Division of Engineering Design (EN DES) for resolution.

Description of Condition

10 CFR 50, Appendix B, Criterion X, Inspection, requires that a program for inspection of activities affecting quality shall be established and executed . . . to verify conformance with the documented instructions, procedures, and drawings for accomplishing the activities.

Also, Criterion XVII, Quality Assurance Records, requires that sufficient records shall be maintained to furnish evidence of activities affecting quality. The records shall include at least . . . the results of reviews, inspections Inspection and test records shall, as a minimum, identify the inspector or data recorder Records shall be identifiable and retrievable. . . .

The containment spray header supports, which attach to the safety-related containment spray system and residual heat removal spray system, were found to lack documentation to verify material specifications, and to provide results of reviews and inspections. The main fabrication of the supports had been in CBI's Birmingham shops with only minor work performed in the field.

Safety Implication

All the necessary documentation of the components has been found and traceability of material has been established. The documentation shows that all procedures and practices required in the fabrication of these safety-related components have been followed and they are fully qualified to perform their design function. Therefore, had the nonconformance gone uncorrected, the safety of the plant would not have been adversely affected at any time during its lifetime.

Corrective Action

TVA requested CBI to certify that the materials used meet or exceed the requirements of SA516, Grade 70, A36, A106 Grade B or A307 Grade B. TVA also requested that CBI provide documentation that qualified welders performed the welding, qualified inspectors inspected the welding, and visual examinations were performed on the welds.

CBI transmitted to TVA Exhibits I and II which provide certification of the material specifications and which provide documentation of the traceability of the material to CBI's warehouse. Certified mill test reports or certificates of compliance have been supplied to the warehouse and this is the same level of traceability that TVA provides on TVA-built supports. We are including in Exhibit I representative samples of final bill of materials supplied by CBI.

Exhibit II also states that qualified welders were used, qualified inspectors inspected the welding, and the welds were visually examined.

CBI also transmitted Exhibit III which details the shop fabrication and handling procedures used in the Birmingham shop. These processing procedures illustrate the control of material that the shop provides.

Preventive Action

In future specifications, TVA will include pipe supports which attach to safety-related systems in a classification such that material traceability to the warehouse and fabrication, installation, and inspection documentation will be provided. If other pipe supports are required under this contract, the design specifications WBNP-DS-1705-1440 will be revised.

EXHIBIT I

Chicago Bridge & Iron Company

p o box 277
Birmingham, Alabama 35201



August 29, 1977

Mr. R. G. Domer, W9 D224
Chief Civil Engineer
Civil Engineering Branch
TENNESSEE VALLEY AUTHORITY
400 Commerce Avenue
Knoxville, Tennessee 37902

TVA CONTRACT 73C61-75320
CONTAINMENT VESSEL FOR
WATTS BAR NUCLEAR PLANT
UNIT I AND II
CBI CONTRACT 72-4333/34U
LETTER NO. 1:1P - 192

Dear Mr. Domer:

Mr. Bob Gilmore called Friday, August 26, 1977 and requested more clarification on the pipe support material problem, which I have attached.

Mr. Earl George, our Birmingham Purchasing Manager, has confirmed that all A36, A283 and A516 material has CTR's.

Call if we can be of further assistance.

Very truly yours,

CHICAGO BRIDGE & IRON COMPANY

RCB for
Roy Gerety
ROY GERETY
PROJECT MANAGER

RG:mrc

cc: Mr. W. A. English-TVA-Knoxville, Tennessee
Mr. J. M. Anderson-TVA-Chattanooga, Tennessee
Mr. A. J. Goodwin-TVA-Fairfield, Alabama

twx 810 733 3654

telephone 205. 595 1191

Received SEP 2 1977

CIVIL ENGINEERING BRANCH

IN		OUT	
No.	Date Time		Date Time
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		ROB	
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		ISGW	
		RCG	
		JAM	
		FWR	
		JWS	
		JB	
		DH	

9/2/77- SGD:NRM

cc: WERS, E4837 C-K

R. O. Barnett, W9C127 C-K

W. M. Bivens, 5103 MIB-K

G. L. Buchanan, W3C126 C-K

P. L. Duncan, W11D136 C-K

✓ W. A. English, W9C125 C-K

R. M. Hodges, W7C126 C-K

G. L. Joyner, 920C CUBS-C

R. M. Jessee, W11D183 C-K

S. Kesler, E3C100 C-K

J. L. Parris, W11B67 C-K (2)

✓ R. M. Pierce, W4C125 C-K (2)

H. C. Russell, W5C125 C-K

J. P. Vineyard, W6D224 C-K

R. J. Gerety - Project Manager
Birmingham Construction

1. G. Doser, WS 7224 Re: PIPE SUPPORTS
2. Civil Engineer CBI CONTRACTS 72-4333/34
3. Engineering branch
4. OSSEE VALLEY AUTHORITY

We have reviewed further these bills of material - bill sheets 402 thru 412, 348 thru 353, 383 thru 385 and we state that the A36 Str. A283 and A516 plate was purchased and supplied to the specified specifications.

CBI requires that CTR's be furnished on all A36, A283 and A516 material purchases. These CTR's are verified and are kept on file; however, since this material did not require traceability, we were not notified of the specific heats used and cannot furnish CTR's to the exact heat numbers

In addition the A53 and A106 pipe was supplied with CTR's and they are on file. Also, the fasteners were supplied with certificates of compliance which we have on file.

Call if we can be of further assistance.

By: E. A. George
E. A. George
Birmingham Purchasing

There is a
FOY SERVICE
MANAGER

Mr. W. A. English-IVA-Knoxville, Tennessee
Mr. J. M. Anderson-CHS-Memphis, Tennessee
Mr. J. J. Goodwin-IVA-Fairfield, Alabama

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 214. 215. 216. 217. 218. 219. 220. 221. 222. 223. 224. 225. 226. 227. 228. 229. 230. 231. 232. 233. 234. 235. 236. 237. 238. 239. 240. 241. 242. 243. 244. 245. 246. 247. 248. 249. 250. 251. 252. 253. 254. 255. 256. 257. 258. 259. 260. 261. 262. 263. 264. 265. 266. 267. 268. 269. 270. 271. 272. 273. 274. 275. 276. 277. 278. 279. 280. 281. 282. 283. 284. 285. 286. 287. 288. 289. 290. 291. 292. 293. 294. 295. 296. 297. 298. 299. 300. 301. 302. 303. 304. 305. 306. 307. 308. 309. 310. 311. 312. 313. 314. 315. 316. 317. 318. 319. 320. 321. 322. 323. 324. 325. 326. 327. 328. 329. 330. 331. 332. 333. 334. 335. 336. 337. 338. 339. 340. 341. 342. 343. 344. 345. 346. 347. 348. 349. 350. 351. 352. 353. 354. 355. 356. 357. 358. 359. 360. 361. 362. 363. 364. 365. 366. 367. 368. 369. 370. 371. 372. 373. 374. 375. 376. 377. 378. 379. 380. 381. 382. 383. 384. 385. 386. 387. 388. 389. 390. 391. 392. 393. 394. 395. 396. 397. 398. 399. 400. 401. 402. 403. 404. 405. 406. 407. 408. 409. 410. 411. 412. 413. 414. 415. 416. 417. 418. 419. 420. 421. 422. 423. 424. 425. 426. 427. 428. 429. 430. 431. 432. 433. 434. 435. 436. 437. 438. 439. 440. 441. 442. 443. 444. 445. 446. 447. 448. 449. 450. 451. 452. 453. 454. 455. 456. 457. 458. 459. 460. 461. 462. 463. 464. 465. 466. 467. 468. 469. 470. 471. 472. 473. 474. 475. 476. 477. 478. 479. 480. 481. 482. 483. 484. 485. 486. 487. 488. 489. 490. 491. 492. 493. 494. 495. 496. 497. 498. 499. 500. 501. 502. 503. 504. 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515. 516. 517. 518. 519. 520. 521. 522. 523. 524. 525. 526. 527. 528. 529. 530. 531. 532. 533. 534. 535. 536. 537. 538. 539. 540. 541. 542. 543. 544. 545. 546. 547. 548. 549. 550. 551. 552. 553. 554. 555. 556. 557. 558. 559. 560. 561. 562. 563. 564. 565. 566. 567. 568. 569. 570. 571. 572. 573. 574. 575. 576. 577. 578. 579. 580. 581. 582. 583. 584. 585. 586. 587. 588. 589. 590. 591. 592. 593. 594. 595. 596. 597. 598. 599. 600. 601. 602. 603. 604. 605. 606. 607. 608. 609. 610. 611. 612. 613. 614. 615. 616. 617. 618. 619. 620. 621. 622. 623. 624. 625. 626. 627. 628. 629. 630. 631. 632. 633. 634. 635. 636. 637. 638. 639. 640. 641. 642. 643. 644. 645. 646. 647. 648. 649. 650. 651. 652. 653. 654. 655. 656. 657. 658. 659. 660. 661. 662. 663. 664. 665. 666. 667. 668. 669. 670. 671. 672. 673. 674. 675. 676. 677. 678. 679. 680. 681. 682. 683. 684. 685. 686. 687. 688. 689. 690. 691. 692. 693. 694. 695. 696. 697. 698. 699. 700. 701. 702. 703. 704. 705. 706. 707. 708. 709. 710. 711. 712. 713. 714. 715. 716. 717. 718. 719. 720. 721. 722. 723. 724. 725. 726. 727. 728. 729. 730. 731. 732. 733. 734. 735. 736. 737. 738. 739. 740. 741. 742. 743. 744. 745. 746. 747. 748. 749. 750. 751. 752. 753. 754. 755. 756. 757. 758. 759. 760. 761. 762. 763. 764. 765. 766. 767. 768. 769. 770. 771. 772. 773. 774. 775. 776. 777. 778. 779. 780. 781. 782. 783. 784. 785. 786. 787. 788. 789. 790. 791. 792. 793. 794. 795. 796. 797. 798. 799. 800. 801. 802. 803. 804. 805. 806. 807. 808. 809. 810. 811. 812. 813. 814. 815. 816. 817. 818. 819. 820. 821. 822. 823. 824. 825. 826. 827. 828. 829. 830. 831. 832. 833. 834. 835. 836. 837. 838. 839. 840.

EXHIBIT II

N35-1

Chicago Bridge & Iron Company

p o box 277
Birmingham, Alabama 35201



CEB 770607 501

twx 810 733 3654
telephone 205. 595 1191

June 1, 1977

Mr. R. G. Domer, W9 D224
Chief Civil Engineer
Civil Engineering Branch
TENNESSEE VALLEY AUTHORITY
400 Commerce Avenue
Knoxville, Tennessee 37902

TVA CONTRACT 73C61-75320
CONTAINMENT VESSEL FOR
WATTS BAR NUCLEAR PLANT
UNIT I AND II
CBI CONTRACTS 72-4333/34U
LETTER NO. 1.1P - 173

| Received | | JUN 7 1977 | |
|--------------------------|------|------------|-------|
| CIVIL ENGINEERING BRANCH | | | |
| No. | Date | Time | By |
| 1- | 8 | 9 | PGD |
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Dear Mr. Domer:

Mr. J. Marcel Anderson of TVA Purchasing requested assistance from CBI to help resolve a recent audit problem concerning the pipe support documentation in his letter dated April 29, 1977.

After discussing your letter with various CBI departments, we can offer the following information:

- A. Attached is a Notarized letter from our Purchasing Department clarifying the material purchased and used did meet the specifications. Copies of the Final Bill of Materials listed in the letter from Purchasing are also attached. CBI uses the Bill Sheets for purchasing material and routing the material through our Manufacturing Department. Please note that all the material has a specification reference on each Bill Sheet.
- B. To the best of my knowledge, qualified welders performed the welding, qualified inspectors inspected the welding and visually examinations were performed on the welds. This statement is supported by the following:
 1. It is standard CBI practice to perform all Nuclear welding with qualified welders.

Chicago Bridge & Iron Company

Mr. R. G. Domer, W9 D224
TENNESSEE VALLEY AUTHORITY
Page -2- 1.1P - 173
June 1, 1977

2. CBI qualified and certified capable inspectors were assigned to all areas where welds were being made.
3. Welding was under the direction of Welding QA Supervisors who are knowledgeable in visually examination requirements.

At this time we do not plan to revise the QA Manual since there are already the provisions in the QA Manual to meet the above requirements of documentation as specified by TVA.

Should you have any questions or need further assistance, please contact us in Birmingham.

Sincerely,

CHICAGO BRIDGE & IRON COMPANY



ROY J. GERETY
PROJECT MANAGER

RJG:mrc

cc: Mr. W. A. English-TVA-Knoxville, Tennessee
Mr. J. M. Anderson-TVA-Chattanooga, Tennessee
Mr. A. J. Goodwin-TVA-Fairfield, Alabama

JUN 7 1977

CC:

— RGD:RG
✓MEDS, E4937 C-K -w/att
RO Barnett, W5C127 C-K
WM Bivens, 5100 MIB-K
GL Buchanan, W3C126 C-K
PL Duncan, W11D136 C-K
✓WA English, W5C126 C-K
RM Hodges, W7C126 C-K
GL Joyner, 920C CUBB-C
RM Jessee, W10D183 C-K
S Kesler, E3C100 C-K
✓JL Parris, W11B67 C-K (2)
✓RM Pierre, W4C126 C-K (2)
HC Russell, W5C126 C-K

June 1, 1977

R. J. Gerety - Project Manager
Birmingham Construction

Re: Pipe Supports
CBI Contracts 72-4333/34

We have your letter dated May 5, 1977 regarding traceability of the pipe support material furnished on the referenced contracts.

We have reviewed the following related bills of material - Bill sheets 402 thru 412, 348 thru 353, 383 thru 385 and bill sheet 399, and we certify that to the best of our knowledge the plate and structural material specified was actually used.

Edwina Strickland
LS

Edwina Strickland
Buyer

is

Subscribed and sworn to before me this

1st day of June, 1977

Raymond

Notary Public

[illegible]

EXHIBIT III

CEC 77 08 17 510

Chicago Bridge & Iron Company

Box 277

Birmingham, Alabama 35201

N35-1
RCS



August 16, 1977

| Received | | 17 1977 | |
|--------------------------|-------------|-------------|----------|
| CIVIL ENGINEERING BRANCH | | | |
| IN | | OUT | |
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17 14 3

Mr. R. G. Domer, W9 D224
 Chief Civil Engineer
 Civil Engineering Branch
 KENNESSEE VALLEY AUTHORITY
 400 Commerce Avenue
 Knoxville, Tennessee 37902

TVA CONTRACT 73C61-75320
 CONTAINMENT VESSEL FOR
 WATTS BAR NUCLEAR PLANT
 UNIT I AND II
 CBI CONTRACTS 72-4333/34U
 LETTER NO. 1.1P - 191

Dear Mr. Domer:

Mr. Bob Gilmore of your department has requested additional information to help resolve the material problem you have on the pipe supports and pipe hangers.

The Birmingham Manufacturing facility has a Metal Receiving Yard where all material is received, checked and stored until required for fabrication of that particular contract. The supervisor responsible for receiving, storing and distributing the material for fabrication is fully qualified to handle QA material. Also, the two foreman working in the Receiving Yard are qualified to receive and store QA material.

The Storage Yard itself is set up so that the material is separated according to size and the type of material. For instance, the SA 516 Grade 70 material is physically separated from the 283-C material by quite some distance.

If the material ordered and received is under an "A" type of identification then the supervisor will fill out a Metal Receiving Inspection Report. After the material has been inspected the Metal Receiving Inspection Report is returned to the QA Department and further checks are made to insure that the Heat Slab No. and other information on the Material Receiving & Inspection Report agrees with the Purchase Order and information received from the supplier. That plate can not be used for fabrication until Purchasing and the Manufacturing QA Department have released it for fabrication.

Chicago Bridge & Iron Company

R. G. Damer, W9 D224
TENNESSEE VALLEY AUTHORITY
1.1P - 191
August 16, 1977

There is nothing done in our Birmingham Manufacturing Shop verbally. Every item that goes through the shop for a contract has to have a Work Order made out even if it is not under a quality assurance program.

Example No. 1 is a typical Work Order made out for Pc. Mk. 215-1, shown on CBI Drawing 215, Bill and Material Sheet 348, Line 4. This information is attached to my letter No. 1.1P - 173, dated June 1, 1977. Pc. Mk. 215-1 is classified as a "C" type material. On Example No. 1, which is attached for your use, is a typical Work Order made out for Pc. Mk 215-1. The steps to fabricate this particular item are numbered 1 through 8 starting with delivery from the yard ending up with shipping it. Please note that on Step No. 3, there is a Daily Fab Sheet required. The Storage Yard supervisor will take the Work Order and deliver the material from the Storage Yard to the Lay Out section of the shop, which would be Step No. 2. The Yard Supervisor uses the information shown down at the bottom of the Work Order which states there is one piece of plate 60" X 1/2" thick X 19'-9" long. This item is marked as 215-1. Since the material does have a special mark, the item would be covered by a Material & Receiving Inspection Report which they also have in their session.

The next step is for the Lay Out crew to lay out the plate according to the drawings and cutting sketch.

The third step is for the plate to be moved to the Burning Shop where it is fabricated according to the drawings and signed off on the Daily Fabrication Report.

The fourth step is to burn any bevel on edges that require them.

The fifth step is have it taken to the Weld Shop which in this case is Weld Shop No. 3, where the welding is performed according to the correct procedures and by qualified welders.

Steps No.'s 6, 7, and 8 cover the sandblasting, painting and final inspection and shipping.

Example No. 2 is a Work Order for Pc.Mk. No. 215-2 of the same bill sheet discussed above. This item is a "D" type material and does not require documentation of Example No. 1. The material would come from our 516 Grade 70 stock as shown from the check at the bottom of the Work Order. This material would not have a Metal & Receiving Inspection Report, however it would have been checked when it was received to make sure that it was in fact SA 516 Grade 70 and stacked with that type of material.

Chicago Bridge & Iron Company

Mr. R. G. Damer, W9 D224
TENNESSEE VALLEY AUTHORITY
Page 3 1.1P - 191
August 16, 1977

The steps I explained in Example No. 1 would cover the work performed on Work Order Example No. 2, except that Step No. 4 shows the piece to be rolled. Please note that even though example No. 2 is a "D" type material the welding was performed in Weld Shop No. 3 with welders that perform work on material that is covered by a complete QA documentation program.

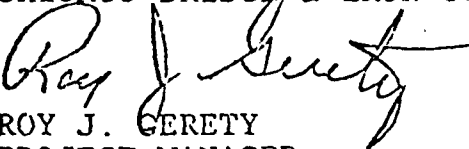
As you can see, the same supervision and crew store, lay out, burn, roll and weld the contract material regardless of the type of documentation required. They are all qualified to handle "A" type material and therefore we feel are qualified to handle "D" type material. The only difference between the type of Work Order used for "A" or "D" type material is the documentation required by that type of material.

Our system of using the Purchase Orders to check the material when it is received, work orders to route the material from the Storage Yard to the Shipping Yard and the QA Department to perform any documentation or checks required insures CBI that the correct material is used where required and documented to meet the contract needs.

If you should have any more questions or if we can be of further help in resolving the audit questions, please contact us here in Birmingham.

Sincerely,

CHICAGO BRIDGE & IRON COMPANY


ROY J. GERETY
PROJECT MANAGER

RJG:mrc

cc: Mr. W. A. English-TVA-Knoxville, Tennessee
Mr. J. M. Anderson-TVA-Chattanooga, Tennessee
Mr. A. J. Goodwin-TVA-Fairfield, Tennessee

Attachments

CC:
MED - 2004
✓ MED - 2007 C-K
RO B... W100127 C-K
WM B... 5100 MIF K
GL B... W100127 C-K
PL B... W100127 C-K
✓ WA B... W100127 C-K
RM B... W100127 C-K
GL Jaynes, 9200 CLEE-C
RM Jesse, W100127 C-K
S Kesler, E2C100 C-K
JL Parris, W11867 C-K (2)
LRA B... W100127 C-K (2)



METAL RECEIVING INSPECTION REPORT

PLEASE RETURNED BY
PURCHASING AND SHOP Q. A.

No. 72-4333
r No. 4333 Sheet 54
USS - Gary
tem No. 215-1 Quan. Ordered 1
Spec. SA516 Grade 70
on Plate 100 x 1/2 x 237
By DL Date 6/13/75

| ROUTE TO | BY | DATE | FOR |
|----------|----|------|------------|
| Rec. Yd. | DL | 6-23 | Inspection |
| | | | |
| | | | |
| | | | |

NG INSPECTION: (By Receiving Dept - From Information on Material)

Car or Truck No. EJE 5126 Quantity Received 1
Inspected 1 Partial ☐ Complete ☒
Spec. (Marked on Material) A516-70
D No. (Heat, Slab, Lot, Serial, Etc.)
Mo 2229
9-1

Yes ☒ No ☐ See "Nonconformities"
K Yes ☒ No ☐ See "Nonconformities"
Yes ☒ No ☐ See "Nonconformities"
K Yes ☒ No ☐ See "Nonconformities"

AT TREATED PLATE:

g to Check (✓) Applicable Mill Stamping
Heat Treated Stamped MT Yes ☐ No ☒
o Heat Treat Stamped G Yes ☐ No ☐
rmities if "Yes", Explain Yes ☐ No ☒

held for Disposition and Tagged "Hold" Yes ☐ No ☐

By Receiving M. Nelson Date 7-1-75

IRMITIES

(Received)

By Purchasing

efore Material Meets the Specification and is Released For Use:

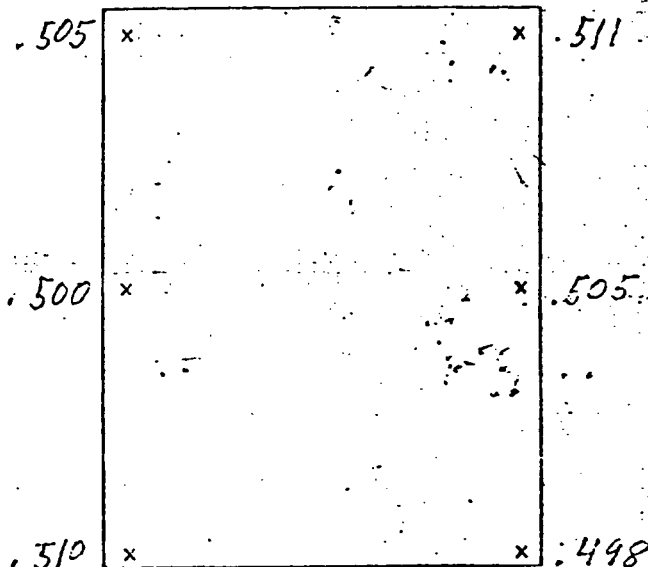
atment - Yes ☐ MT - Yes ☐ UT - Yes ☐ PT - Yes ☐
No ☐ No ☐ No ☐ No ☐

By _____ Date _____

in (By Quality Assurance)

By _____ Date _____
NG OR SHOP QUALITY ASSURANCE

Thickness Record or Sketch



MATERIAL RELEASED FOR FABRICATION

Purchasing mls. Date 7-9-75

Quality Assurance N/O Date _____

CBI NO.

EXAMPLE #1

BH 61-A REV FEB 76

WORK ORDER

McC

| | | | | |
|----------|------------|----------------|------------|---------------------|
| 72-4333 | | DATE COMPLETED | No. 9540 | DATE COMPLETED |
| DELIVER | YD 1 | | BEND | |
| LAYOUT | 2 | | FORM | |
| SHEAR | | | MACHINE | |
| BURN | 3 | DAILY-FAB | DRILL | |
| BEVEL | 4 | | REP. | |
| GRIND | | | WELD W-3 | 5 |
| CUT | | | STR SHOP | |
| THREAD | | | HEAT TREAT | |
| PUNCH | | | SB | 6 |
| PLANE | | | PAINT | 7 |
| SET ENDS | A-516-70 | | SHIP | 8 |
| ROLL | | | | |
| DISH | LOW STRESS | STENCIL | CODE No. | 3360
PIPE GUIDES |

| PCS. | MARK | DESCRIPTION | LENGTH | |
|------|-------|---------------|--------|------|
| | | | FT. | INS. |
| 3 | 215-1 | 1/2 SK X 1/2" | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

| | |
|------------|-----------|
| B.S. 348 | DWG. 215 |
| LINE NO. 4 | B.S. C-20 |

| CUT FROM | | | | STR. OR ITEM | LEFT OVER | | |
|----------|-----------------|-----|------|--------------|-----------|-----|------|
| PCS. | SIZE | FT. | INS. | | PCS. | FT. | INS. |
| 1 | 1/2 100' X 1/2" | 19 | 9 | 215/ | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

| | | |
|----------|----------|--|
| CONTRACT | B.S. | RETURN STUB TO SHOP OFFICE WHEN MAT'L IS CUT |
| 72-4333 | LINE NO. | |
| | DATE | 26 1977 |

No. 9540

EXAMPLE #2

BH 61-A REV FEB 76

WORK ORDER

MCC

| | | | | |
|--------------------------|----------|----------------|---------------|----------------|
| 72-4333 | | DATE COMPLETED | No. 9541 | DATE COMPLETED |
| DELIVER | YD 1 | | BEND | |
| LAYOUT | 2 | | FORM | |
| SHEAR | | | MACHINE | |
| BURN | 3 | | DRILL | |
| BEVEL | | | FIT | |
| GRIND | | | WELD W-3 | 5 |
| CUT | | | STR SHOP | |
| THREA LOW STRESS STENCIL | | | HEAT TREAT | |
| PUNCH | | | SB | 6 |
| PLANE | A-516-70 | | PAINT | 7 |
| SET ENDS | | | SHIP | 8 |
| ROLL | 4 | | | |
| DISH | | | Code No. 3350 | |

PIPE GUIDES

| PCS. | MARK | DESCRIPTION | LENGTH | |
|------|-------|---------------|--------|---------|
| | | | FT. | INS. |
| 3 | 215-2 | R 6" X 1/2" X | 9 | 7 19/32 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

| | |
|------------|-----------|
| B.S. 348 | DWG. 215 |
| LINE NO. 6 | B.S. C-20 |

| CUT FROM | | STR OR ITEM | | LEFT OVER | | |
|----------|--------------|-------------|------|-----------|-----|------|
| PCS. | SIZE | FT. | INS. | PCS. | FT. | INS. |
| 1 | R 92 X 1/2 X | 20 | 0 | 4 | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

| | | | |
|------------------|-------------------|--------------|--|
| CONTRACT 72-4333 | B.S. LINE NO. 348 | DATE 28 1977 | RETURN STUB TO SHOP OFFICE WHEN MAT'L IS CUT |
| No. 9541 | | | |