BHARAT HEAVY ELECTRICALS LTD.

Component Fabrication Plant
Rudrapur – 263153 (Uttarakhand)
Phone: (05944) 257273, Fax: 243605

Date: 09.05.2017

Corrigendum – 01 for NIT No_32443

ENQUIRY NO.:- 1. **BHE/RU/PDN/2017-18/04, Dt:-21.04.2016**

Following amendment is issued in above tender enquiry for work of "Fabrication work of IPBD enclosure & conductor inside BHEL-Rudrapur."

Sl. No	Tender Inquiry Clause and Point	Particular	Amended as
1.	Due Date of Tender opening	Date: 12.05.2017 Time 15:30Hrs	Date: 16.05.2017 Time 15:30Hrs
2	As per clause II) 1.1 of Annexure-I of above tender enquiry	Rating of welding machine For TIG welding machine: 500Amps and above For MIG welding machine: 500Amps and above	Rating of welding machine For TIG welding machine: 300Amps to 600Apms For MIG welding machine: 300Amps to 600Apms
3.	Qualifying Criteria for Techno-Commercial Bid(Annexure-II) Clause Sl no. 3:	Bidder to submit 2 no's aluminum welder qualification certificate issued from any authorized agency(NTPC/Lloyd/BHEL) as per Contractors Scope Of Supply at sl. No. 1.4 and 1.5. Certificate should be issued before due date of the tender.	Bidder to submit 2 no's aluminum welder qualification certificate issued from any authorized agency(NTPC/Lloyd/BHEL) as per Contractors Scope Of Supply at sl. No. 1.4 and 1.5. validity of certificate should be as par cl. QW-322.1 of American welding standard

All other term & condition remain same.

This Corrigendum is to be duly signed and sealed to be submitted along with technical bid/Price Bid. For further clarification bidder may contact to undersigned.

हिमांशु 09-05-17

Sr. Engineer (PDN)
Phone: (05944) 257273,
Email: himanshun@bhel.in

हिमांशु कुमार नाईक
वरि. अभियन्ता (उत्पादन)
बी.एच.ई.एल. रुद्रपुर
उत्तराखण्ड -263153

Himanshu Kumar Naik
Sr. Engineer (Production
B.H.E.L. Rudrapur
Uttarakhand-263153

in making qualification tests for double-welded groove welds or single-welded groove welds with backing shall be the same as those for any Welding Procedure Specification (WPS) qualified by the manufacturer, or shall be as shown in figure QW 469.1.

A single-welded groove-weld test coupon with backing or a double welded groove weld test coupon shall be considered welding with backing. Partial penetration groove welds and fillet welds are considered welding with backing.

QW-310.3 Welding Groove Without Backing. The dimensions of the welding groove of the test coupon used in making qualification tests for single-welded groove welds without backing shall be the same as those for any WPS qualified by the manufacturer, or as shown in figure QW-469.2.

QW-320 RETESTS AND RENEWAL OF QUALIFICATION

QW-321 Retests

A welder or welding operator who fails one or more of the tests prescribed in QW-304 or QW-305, as applicable, may be retested under the following provisions.

QW-321.1 Immediate Retest Using Visual Examination. When the qualification coupon has failed the visual examination of QW-302.4, retesting shall be by visual examination before conducting the mechanical testing.

When an immediate retest is made, the welder or welding operator shall make two consecutive test coupons for each position which he has failed, all of which shall pass the visual examination requirements.

The examiner may select one of the successful test coupons from each set of retest coupons which pass the visual examination for conducting the mechanical testing.

QW-321.2 Immediate Retest Using Mechanical Testing. When the qualification coupon has failed the mechanical testing of QW-302.1, retesting shall be by mechanical testing.

When an immediate retest is made, the welder or welding operator shall make two consecutive test coupons for each position which he has failed, all of which shall pass the test requirements.

(10) **QW-321.3 Immediate Retest Using Volumetric NDE.** When the qualification coupon has failed the volumetric NDE of QW-302.2, the immediate retest shall be by the same examination method.

(a) For welders and welding operators the retest shall be to examine two 6 in. (150 mm) plate coupons; for pipe, to examine two pipes for a total of 12 in. (300 mm) of weld, which shall include the entire weld circumference for pipe or pipes (for small diameter pipe the total number of consecutively made test coupons need not exceed eight).

(b) At the option of the manufacturer, the welder who has failed the production weld alternative test may be retested by examining additional weld areas equal to twice the required length or number of pipe circumferences of the same or consecutively made production weld(s) specified in QW-304.1. If this length of weld passes the test, the welder is qualified and the area of weld on which he had previously failed the test shall be repaired by him or another qualified welder. If this length does not meet the examination standards, the welder has failed the retest and all of the production welds made by this welder shall be examined completely and repaired by a qualified welder or welding operator.

(c) At the option of the manufacturer, the welding operator who has failed the production weld alternative test may be retested by examining additional weld areas equal to twice the required length or number of pipe circumferences of the same or consecutively made production weld(s) specified in QW-305.1. If this length of weld passes the test, the welding operator is qualified and the area of weld on which he had previously failed the test shall be repaired by him or another qualified welder or welding operator. If this length does not meet the examination standards, the welding operator has failed the retest and all of the production welds made by this welding operator shall be examined completely and repaired by a qualified welder or welding operator.

QW-321.4 Further Training. When the welder or the welding operator has had further training or practice, a new test shall be made for each position on which he failed to meet the requirements.

QW-322 Expiration and Renewal of Qualification

QW-322.1 Expiration of Qualification. The performance qualification of a welder or welding operator shall be affected when one of the following occurs:

(a) When he has not welded with a process during a period of 6 months or more, his qualifications for that process shall expire; unless, within the 6 month period prior to his expiration of qualification

(1) the welder has welded with that process using manual or semiautomatic welding, under the supervision and control of the qualifying manufacturer or contractor or participating organization(s) as identified in QW-300.3; that will extend his qualification for an additional 6 months

(2) the welding operator has welded with that process using machine or automatic welding, under the supervision and control of the qualifying manufacturer or contractor or participating organization(s) as identified in QW-300.3; that will extend his qualification for an additional 6 months

(b) When there is a specific reason to question his ability to make welds that meet the specification, the qualifications

that support the welding he is doing shall be revoked. All other qualifications not questioned remain in effect.

QW-322.2 Renewal of Qualification

(a) Renewal of qualification expired under QW-322.1(a) may be made for any process by welding a single test coupon of either plate or pipe, of any material, thickness or diameter, in any position, and by testing of that coupon as required by QW-301 and QW-302. A successful test renews the welder or welding operator's previous qualifications for that process for those materials, thicknesses, diameters, positions, and other variables for which he was previously qualified.

Providing the requirements of QW-304 and QW-305 are satisfied, renewal of qualification under QW-322.1(a) may be done on production work.

(b) Welders and welding operators whose qualifications have been revoked under QW-322.1(b) above shall requalify. Qualification shall utilize a test coupon appropriate to the planned production work. The coupon shall be welded and tested as required by QW-301 and QW-302. Successful test restores the qualification.

QW-350 WELDING VARIABLES FOR WELDERS

QW-351 General

A welder shall be requalified whenever a change is made in one or more of the essential variables listed for each welding process.

Where a combination of welding processes is required to make a weldment, each welder shall be qualified for the particular welding process or processes he will be required to use in production welding. A welder may be qualified by making tests with each individual welding process, or with a combination of welding processes in a single test coupon.

The limits of weld metal thickness for which he will be qualified are dependent upon the approximate thickness of the weld metal he deposits with each welding process, exclusive of any weld reinforcement, this thickness shall be considered the test coupon thickness as given in QW-452.

In any given production weldment, welders may not deposit a thickness greater than that permitted by QW-452 for each welding process in which they are qualified.

QW-352
OXYFUEL GAS WELDING (OFW)
Essential Variables

Paragraph		Brief of Variables
QW-402 Joints	.7	+ Backing
QW-403 Base Metals	.2	Maximum qualified
	.18	ϕ P-Number
QW-404 Filler Metals	.14	± Filler
	.15	ϕ F-Number
	.31	ϕ t Weld deposit
QW-405 Positions	.1	+ Position
QW-408 Gas	.7	ϕ Type fuel gas

QW 353
SHIELDED METAL-ARC WELDING (SMAW)
Essential Variables

Paragraph		Brief of Variables
QW-402 Joints	.4	− Backing
QW-403 Base Metals	.16	ϕ Pipe diameter
	.18	ϕ P-Number
QW-404 Filler Metals	.15	ϕ F-Number
	.30	ϕ t Weld deposit
QW-405 Positions	.1	+ Position
	.3	ϕ ↑↓ Vertical welding

QW-354
SEMIAUTOMATIC SUBMERGED-ARC WELDING (SAW)
Essential Variables

Paragraph		Brief of Variables
QW-403 Base Metals	.16	ϕ Pipe diameter
	.18	ϕ P-Number
QW-404 Filler Metals	.15	ϕ F-Number
	.30	t Weld deposit
QW-405 Positions	.1	+ Position