

PANAMA CANAL AUTHORITY	VARIATION	PAGE 1 OF 4
1. REQUEST FOR PROPOSAL No.: RFP-76161	2. CONTRACT No.: CMC-221427	3. DATE: March 24, 2014
		4. VARIATION No.: 091

5. ISSUED BY:

PANAMA CANAL AUTHORITY
Employer's Representative
Locks Project Management Division
Building 740, Corozal
Panama, Republic of Panama

6. NAME AND ADDRESS OF CONTRACTOR (INCLUDE PHYSICAL & POSTAL ADDRESS) Grupo Unidos por el Canal, S.A. Building 22B, Brujas Road Cocoli, Republic of Panama	7. CONTRACTOR'S TELEPHONE NUMBER: 507-316-9900
	8. CONTRACTOR'S FACSIMILE NUMBER:

9. VARIATION:


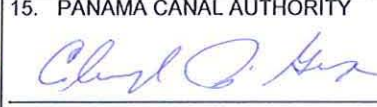
- ☒ The contract referred to in item No. 2 is hereby varied as set forth in item 10, entitled "DESCRIPTION OF VARIATION".
☒ YES. ☐ NO. The contractor shall send a copy, duly signed, of this Variation to the Employer's Representative/Contracting Officer.

	9 A. THIS VARIATION IS EXECUTED ON THE BASIS OF: (Specify the legal authority). THE VARIATION DESCRIBED IN ITEM 10 IS HEREBY INCORPORATED AND MADE A PART OF THE CONTRACT.
	9 B. THE CONTRACT REFERRED TO IN ITEM NO. 2, IS VARIED TO INCORPORATE ADMINISTRATIVE CHANGES (such as the paying office, account numbers, etc.).
X	9 C. THIS BILATERAL AGREEMENT IS SIGNED AND INCORPORATED INTO THE CONTRACT REFERRED TO IN ITEM NO. 2 OF THIS FORM, ON THE BASIS OF: (Specify the legal authority) Volume III, Conditions of Contract, Sub-Clause 1.16 [Entire Agreement].
	9 D. OTHER. (Specify manner and the legal authority).
	9 E. ACCOUNT NUMBER (If required):

10. DESCRIPTION OF THE VARIATION (List in accordance with the order of the Contract. If additional space is required, use blank sheets).

See attached

Except for the variation(s) herein specified, all other terms and conditions of the Contract remain unchanged.

11. NAME AND TITLE OF THE PERSON AUTHORIZED TO SIGN (Type or print) Bernardo Gonzalez Contractor's Representative	12. NAME AND TITLE OF THE EMPLOYER'S REPRESENTATIVE/CONTRACTING OFFICER (Type or print) Jorge de la Guardia, Employer's Representative
13. CONTRACTOR  (Authorized signature)	14. DATE: 24/03/2014
	15. PANAMA CANAL AUTHORITY  (Employer's Representative/Contracting Officer's signature)
	16. DATE: 24/MAR/2014

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This Variation No. 091 is issued to reflect the following changes:

1. **Volume II, Part 2, Section 01 86 13 [Plant Mechanical Systems and Equipment]:** Delete Paragraph 1.04.J in its entirety and replace it with the following:

"J. Electric Motors: The motors for overhead traveling cranes shall be designed, manufactured and assembled according to IEC standard for Crane Duty Motors. All other motors shall be designed, manufactured and assembled in accordance with the latest version of NEMA standard MG-1 and applicable ANSI/IEEE standards. Motors operating conditions shall be:" (RFV-223)

2. **Volume II, Part 2, Section 26 43 13 [Transient Voltage Surge Suppressors]:** Delete Paragraph 1.03 A.5 in its entirety and replace it with the following:

"5. TVSSs shall provide clear visual indication of operability or failure when this functionality is technically available." (RFV-234)

3. **Volume II, Part 2, Section 26 43 13 [Transient Voltage Surge Suppressors]:** Table 26 43 13-3 is to remain unchanged, however, the header to paragraph 1.03.C.7 shall be deleted in its entirety and be replaced with the following:

"7. Protectors for VHF/UHF Radio Frequency Transmission Lines" (RFV-234)

4. **Volume II, Part 2, Section 26 43 13 [Transient Voltage Surge Suppressors]:** Add Paragraph 1.03.C.11 as follows:

"11. Surge Protectors for Wideband Radio Systems:

- a. Units shall have the following or better characteristics:

Table 26 43 13-5: Characteristics of Protectors for Wideband Radio Transmission Lines	
Bandwidth	As required to cover all the frequencies regarding the MBMRCSS
Connectors	"N" type
Enclosure	Aluminum
Impedance	50 Ω
Insertion Loss	≤ 0.2 dB over the entire band
Maximum Power	150 watts
Standing Wave Ratio (VSWR)	1.2:1
Supported Capacity	20 kA
Throughput Energy	As required considering activation voltage and response time"

(RFV-234)

5. **Volume II, Part 2, Section 26 33 00 [Direct Current Equipment]:** Delete Paragraph 1.03.B.1.e in its entirety and replace it with the following:

"e. Battery rooms shall be in ground floor of each control building and machinery building, and shall have a door connecting to adjacent electrical equipment room. The requirement for a connecting door may be waived if a safe, protected and

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expeditious access between the battery room and adjacent electrical equipment rooms is provided. The doors for entering each room shall be within view of each other. Battery rooms shall be sized as required, with no less than 20 m2 in control buildings and 10 m2 in machinery rooms. +125 VDC and -48 VDC battery rooms shall be independent." (RFV-222)

6. **Volume II, Part 2, Section 28 31 00 [Fire Alarm Systems for Buildings]:** Delete Paragraph 1.03.A.1 in its entirety and replace it with the following:

"1. **Weather Resistance:** All fire alarm system components installed outdoors shall be suitable for continuous operation in the exterior environment at each locks complex. Outdoor alarm initiating and indicating devices shall be suitable and listed for outdoor use, shall prevent the entrance of water and shall be unaffected by temperature and humidity. Fire alarm components installed in outdoor locations shall be UV resistant." (RFI-0598)

7. **Volume II, Part 2, Section 28 31 00 [Fire Alarm Systems for Buildings]:** Delete Paragraph 1.04.A.3 in its entirety and replace it with the following:

"3. **Alarm signals:** The system(s) shall be capable of producing one distinctive audible evacuation signal. The Alarm audible signal pattern shall be as required by section 18.4.2 "Distinctive Evacuation Signal" of NFPA 72 " (RFI-0598)

8. **Volume II, Part 2, Section 28 31 00 [Fire Alarm Systems for Buildings]:** Delete Paragraph 1.04.E.2 in its entirety and replace it with the following:

"2. **Audible Devices:** "Indoor horns shall be suitable and listed for indoor use, shall have a minimum sound rating of 90 dB at 3 m, and shall conform to the applicable requirements of UL 464. The only exceptions will be the Outdoors areas, Maintenance Building and Machinery Buildings 1, 2, 3 and 4, that shall be provided with horns suitable and listed for outdoor use which have a minimum sound rating of 90 dB at 3 m and which conform to the applicable requirements of UL 464." (RFI-0598)

9. **Volume II, Part 2, Section 28 50 00 [Evacuation Systems]:** Delete Paragraph 1.04.C.2.b in its entirety and replace it with the following:

"b. Regardless of whether the call is responded to, by a live recipient, an answering machine, voicemail or any other means, automatically detect if the evacuation message has been completely played or not. If (for any reason) the call,

- (a) has not been answered,
(b) has been rejected or



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(c) has been terminated prior to the completion of the playing of the message resulting in an undelivered or incomplete message.

then the system shall call again, as many times as required, until the message is completely played or the number of configurable attempts is reached, whichever happens first." (RFV-214)

10. **Volume II, Part 2, Section 40 70 00 [SCADA System]:** Delete Paragraph 1.03.F.1.b in its entirety and replace it with the following:

"b. Based on information furnished by the Contractor, the Employer will make SCADA data base changes and additional HMI custom display pages in the existing master station at Balboa Building 731, as required for the new equipment to be provided at the Atlantic and Pacific Lock Complexes." (RFV-227)

11. **Volume II, Part 2, Section 48 19 16 [Inverters]:** In Table 48 19 16-2 [Inverter Characteristics] delete the following:

Output	Rating	As required per calculations, but no less than 2 kVA per module
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and replace it with the following:

Output	Rating	As required per calculations, but no less than 1 kVA per module
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(RFV-219)

