

North – South Commuter Railway (NSCR) Project (Malolos – Tutuban) Package CP03: Rolling Stock			
<i>Volume II, Part 2 – Employer's Requirements</i>			
ITEM NO.	REFERENCE CLAUSE/ SECTION	CLARIFICATION REQUEST	RESPONSE
1	Section VI, Page GS-64, Clause 12.1 Inspection Testing and Commissioning General Bid Bulletin No. 2, Annex "A", Item No. 8 General Bid Bulletin No. 3, Annex "A", Item No. 11 General Bid Bulletin No. 8, Annex "A", Item No. 11	<p>We acknowledge receipt of the subject Employer's response; however, it is our belief that the amount for the train running for the other contractor's sole testing (such as CP04 contractor) is unknown and is apparently out of CP03 contractor's scope; therefore, we recommend to revise the Employer's response to read:</p> <p>The contractors' tests which require the train set solely for their purpose shall be borne by those contractors. CP03 contractor will charge actual cost incurred for such tests to the other contractors via the Employer.</p> <p>In addition, the Employer's response included the costs for the operation control personnel. We; however, believe that this personnel is required to be able to coordinate with all other contractors, CP01, CP02 and CP04 contracts. This is over and above the CP03 contractor's scope of responsibility, and ability. With this reason, we request the Employer to exclude the scope of supplying the operating control personnel from the CP03 contract.</p>	<p>For clarity, General Bid Bulletin (GBB) No. 8, Annex "A", Item 11, 2nd Paragraph is amended as follows:</p> <p>"However, the cost to provide water and other services including train operations and operation-centred personnel (train operators and rolling stock personnel) required for inspection, testing and commissioning including integrated testing and commissioning and trial runsteal Centreter shall be borne by the Contractor. Train operator and associated rolling stock personnel required for all Interfacing Contractors will be provided by the CP03 Contractor (24/7 as required) for the completion of testing and commissioning."</p> <p>Please also refer to Item 2 of Annex "B" of this GBB.</p>

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<i>Technical Specifications</i>			
2	Section VI, Page TS-4, Clause 1.4 Track Standards General Bid Bulletin No. 3, Annex "A", Item No. 15	We note that the Employer denied a request for changing the rail specifications to JIS 50N on main line track. We wish to propose this request one more time since the baseline rolling stock design for the wheels is based upon a combination with the JIS 50N profile. This interface design between wheels and rail is well proven on current commuter train operation in Japan and service proven. To assure a long term success of this safety critical interface design, we request the Employer to revise the current rail profile specification to JIS 50N on both main line track and the yard track.	The Bidder's request is not accepted. The response in GBB No. 3, Annex "A", Item 15 shall remain.
3	Section VI, Page TS-9, Clause 1.9.1 Noise Requirements	We have reviewed the captioned TS section for the interior and exterior noise requirements which, in our belief, is extremely strict for the commuter rolling stock application, therefore, we request NSCR to review and respond the following comments on the captioned TS section: <u>Background:</u> 1. This project has been promoted in accordance with STEP (Special Terms for Economic Partnership) of Japanese ODA Loans (with Japan through best use of advanced technologies and know-how of Japanese firms); therefore, the baseline design of the rolling stock on this project should be the commuter electric rolling stock design widely adopted in Japan. 2. We have been informed per Information Sharing with Detailed Design Team dated 10/16/2017 that the baseline rolling stock design is the STRASYA (Standard urban Railway System for Asia). 3. In fact, Technical Specifications Section 1.15 Standards	TS Clause 1.9.1 is amended as follows: "The Rolling Stock shall be designed and tested to meet the following noise levels: 1) The interior noise level at any point in any vehicle (including the Driver's Cab), 1.6 m above floor level, while stationary on an open section of track, but with all auxiliary systems running, shall <u>endeavor</u> not to exceed 69 dB(A) Lmax; 2) The exterior noise level of any vehicle, measured 7.5 m from the center and 1.5m above rail level, while stationary on an open section of track with all auxiliary systems running, shall <u>endeavor</u> not to exceed 73 dB(A) Lmax; 3) The interior noise level at any point in any vehicle (including the Driver's Cab) 1.6 m above floor level, with the train running at 0 to 60 km/h on an open

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		<p>refers to many JIS standards as acceptable rolling stock design and construction criteria.</p> <p>4. With the above history of this project development, it is considered reasonable to assume that the rolling stock of this project is based upon such service proven rolling stock design; and we request NSCR to consider the following understanding for the above TS Section 1.9.1.1) through 5):</p> <p><u>Request for Consideration for Noise Measurement Method:</u></p> <p>Noise level of the above baseline rolling stock was evaluated in accordance with JIS E4021/4025, which require the noise level evaluation per the following criteria:</p> <p>a) Interior noise level (TS Section 1.9.1, 1) and 3)); per A-weighted equivalent continuous sound pressure level ($L_{A,T}$)</p> <p>b) Exterior noise level (TS Section 1.9.1, 2) and 4)); per transit exposure level ($L_{A,EXT}$)</p> <p>Based upon the above, we request NSCR to consider the above noise measurement criteria in lieu of the specification requirement of L_{max} based criteria.</p> <p>Rolling Stock Design Approach</p> <p>The rolling stock design involves various design parameters which affect each other. Rolling stock noise management is not an exception. To make quiet rolling stocks, it is essential to; a) control noise level at the source (use of quieter equipment and proper wheel/rail interface design), and b) use</p>	<p>section of track, with all auxiliary systems running, shall <u>endeavor not to exceed</u> 74 dB(A) L_{max}. Compliance to this requirement to be validated at the Contractor's proposed facility;</p> <p>4) The exterior noise level of any vehicle, measured 7.5 m from the center and 1.5m above rail level, with the train running at 0 to 60 km/h on an open section of track with all auxiliary systems running, shall <u>endeavor not to exceed</u> 83 dB(A) L_{max}. Compliance to this requirement to be validated at the Contractor's proposed facility; and</p> <p>5) Door operation noise produced by simultaneous operation of all saloon doors on one side of the car shall <u>endeavor not to exceed</u> 72 dB(A) L_{max} during the sliding operation and 78 dB(A) L_{max} for the locking/unlocking."</p>

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		<p style="text-align: center;">CLARIFICATION REQUEST</p> <p>adequate noise isolation and reduction material such as noise isolation equipment mount, sound deadening material, heavier density floor design, plug doors, heavier gage window glazing material, and many others throughout the entire rolling stock. We, however, presume that this project is not intended to design the rolling stock from clean sheet of paper pursuant to the project back ground stated above. We have a baseline rolling stock design which has adequate and successful service history.</p> <p>Baseline Rolling Stock Noise Information:</p> <p>We have the noise level information of the baseline rolling stocks. While the measurement method was per the above specified JIS E4021/4025 criteria, our review results indicated that the baseline rolling stock has a slightly higher noise values than the specified L_{max};</p> <ol style="list-style-type: none"> 1) 70 dB(A) L_{A,T}* 2) 73 dB(A) L_{A,E,T} 3) 74 dB(A) L_{A,T}* 4) 83 dB(A) L_{A,E,T} 5) 73 dB(A) L_{max}* (During the sliding operation) 78 dB(A) L_{max}* (For the locking/unlocking) <p>Note: Measured at longitudinal center line of the rolling stock.</p> <p>It is noted that the above values are based upon the measurement per JIS E4021/4025 at the straight tangent ballast track.</p>

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4	Section VI, Page TS-	<p>Current bid document does not define detailed track specification of NSCR main line, so we are not able to estimate the noise levels for actual NSCR tracks in case NSCR employs slab tracks. For NSCR information, we only have limited number of measured data at slab tracks for the rolling stock running conditions (item 3) and item 4) above). While those information may not be exactly at a slab track NSCR may build, these are 80 dB(A) $L_{A,r}$(simplified measurement at longitudinal center line) of the rolling stock at typical slab tracks in Japan) for item 3) and 85 dB(A) $L_{A,e}$ (a different rolling stock at different slab track with 3rd rail of oversea's project, 12.5 meter from track center and at 80 km/h) for item 4). Please note that these are reference values only based on our experiences.</p> <p>It is natural to assume that this extra effort to upgrade the noise level requirement to what is currently required will result the rolling stock weight increase from the service proven baseline designs, and to meet the train system weight limit requirement in TS 1.3.1 General Vehicle Configuration and TS 1.7.2 Weight Penalties, therefore, it is imperative to compromise other part of the rolling stock design to satisfy the noise requirements without exceeding the above weight constraints. We consider this is not the best practical approach for this project.</p> <p>We respectfully request NSCR consider the above noise level information for the baseline rolling stocks and respond as soon as possible.</p> <p>Bidder has already submitted the clarification regarding the</p>	<p>Please refer to the response in Item 3 of this Annex.</p>

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	9, Clause 1.9.1 Noise Requirements	<p>said topic (Noise) on 2nd October 2018 but has not received the answer from Employer yet. In order to prepare the bid document on time, Bidder requests for Employer to expedite the consideration to answer and reply to it as soon as possible.</p> <p>==Quoted from No.2 in the clarification sheet submitted on 2nd October 2018==</p> <p>We have reviewed the captioned TS section for the interior and exterior noise requirements which, in our belief, is extremely strict for the commuter rolling stock application, therefore, we request NSCR to review and respond the following comments on the captioned TS section:</p> <p><u>Background:</u></p> <ol style="list-style-type: none"> 1. This project has been promoted in accordance with STEP (Special Terms for Economic Partnership) of Japanese ODA Loans (with Japan through best use of advanced technologies and know-how of Japanese firms); therefore, the baseline design of the rolling stock on this project should be the commuter electric rolling stock design widely adopted in Japan. 2. We have been informed per Information Sharing with Detailed Design Team dated 10/16/2017 that the baseline rolling stock design is the STRASYA (Standard urban Railway System for Asia). 3. In fact, Technical Specifications Section 1.15 Standards refers to many JIS standards as acceptable rolling stock design and construction criteria. 4. With the above history of this project development, it is 	

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		<p>considered reasonable to assume that the rolling stock of this project is based upon such service proven rolling stock design; and we request NSCR to consider the following understanding for the above TS Section 1.9.1.1) through 5):</p> <p><u>Request for Consideration for Noise Measurement Method:</u></p> <p>Noise level of the above baseline rolling stock was evaluated in accordance with JIS E4021/4025, which require the noise level evaluation per the following criteria:</p> <p>a) Interior noise level (TS Section 1.9.1, 1) and 3)): per A-weighted equivalent continuous sound pressure level (L_{A,T}) b) Exterior noise level (TS Section 1.9.1, 2) and 4)): per transit exposure level (L_{A,E,T})</p> <p>Based upon the above, we request NSCR to consider the above noise measurement criteria in lieu of the specification requirement of L_{max} based criteria.</p> <p>Rolling Stock Design Approach</p> <p>The rolling stock design involves various design parameters which affect each other. Rolling stock noise management is not an exception. To make quiet rolling stocks, it is essential to; a) control noise level at the source (use of quieter equipment and proper wheel/rail interface design), and b) use adequate noise isolation and reduction material such as noise isolation equipment mount, sound deadening material, heavier</p>	

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		<p>density floor design, plug doors, heavier gage window glazing material, and many others throughout the entire rolling stock. We, however, presume that this project is not intended to design the rolling stock from clean sheet of paper pursuant to the project back ground stated above. We have a baseline rolling stock design which has adequate and successful service history.</p> <p>Baseline Rolling Stock Noise Information:</p> <p>We have the noise level information of the baseline rolling stocks. While the measurement method was per the above specified JIS E4021/4025 criteria, our review results indicated that the baseline rolling stock has a slightly higher noise values than the specified L_{max};</p> <ol style="list-style-type: none"> 1) 70 dB(A) L_{LAT}* 2) 73 dB(A) L_{LAE T} 3) 74 dB(A) L_{LAT}* 4) 83 dB(A) L_{LAE T} 5) 73 dB(A) L_{Lmax}* (During the sliding operation) 78 dB(A) L_{Lmax}* (For the locking/unlocking) <p>Note: Measured at longitudinal center line of the rolling stock.</p> <p>It is noted that the above values are based upon the measurement per JIS E4021/4025 at the straight tangent ballast track.</p>	

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5	Section VI, Page TS-35, Clause 5.4	<p>Current bid document does not define detailed track specification of NSCR main line, so we are not able to estimate the noise levels for actual NSCR tracks in case NSCR employs slab tracks. For NSCR information, we only have limited number of measured data at slab tracks for the rolling stock running conditions (item 3) and item 4) above). While those information may not be exactly at a slab track NSCR may build, these are 80 dB(A) $L_{A,r}$ (simplified measurement at longitudinal center line of the rolling stock at typical slab tracks in Japan) for item 3) and 85 dB(A) $L_{A,r}$ (a different rolling stock at different slab track with 3rd rail of oversea's project, 12.5 meter from track center and at 80 km/h) for item 4). Please note that these are reference values only based on our experiences.</p> <p>It is natural to assume that this extra effort to upgrade the noise level requirement to what is currently required will result the rolling stock weight increase from the service proven baseline designs, and to meet the train system weight limit requirement in TS 1.3.1 General Vehicle Configuration and TS 1.7.2 Weight Penalties, therefore, it is imperative to compromise other part of the rolling stock design to satisfy the noise requirements without exceeding the above weight constraints. We consider this is not the best practical approach for this project.</p> <p>We respectfully request NSCR consider the above noise level information for the baseline rolling stocks and respond as soon as possible.</p> <p>The current TS requirements for the floor covering read the following:</p>	<p>The Bidder's request is not accepted. The requirements under TS Clause 5.4 shall remain; however, the Bidder is</p>

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	Flooring	<p>The floor covering material shall meet the following performance requirements:</p> <ol style="list-style-type: none"> 1) Slip resistance of 0.75 dry and 0.62 wet in accordance with JIS J0745; 2) Hardness of Shore A Hardness 85-90; 3) Resistance to chemicals in accordance with JIS A 1454 with noticeable variation; and 4) Tensile strength in accordance with JIS K 6251 - 7.3 MPa. <table border="1" data-bbox="475 555 930 1227"> <thead> <tr> <th>Requirements</th> <th>TS Requirements</th> <th>PVC</th> </tr> </thead> <tbody> <tr> <td>Slip resistance (C.S.R. value)</td> <td>Dry: 0.75, Wet 0.62</td> <td>Dry: 0.83, Wet: 0.54</td> </tr> <tr> <td>Hardness measured by Durometer:</td> <td>85 – 90</td> <td>97 (considered equivalent with Shore A Hardness) per ASTM D2240</td> </tr> <tr> <td>Resistance of chemicals:</td> <td>Per JIS A 1454</td> <td>Superior to JIS A1454</td> </tr> <tr> <td>Tensile strength per JIS K 6251:</td> <td>7.3 MPa</td> <td>8.0 MPa</td> </tr> </tbody> </table> <p>The baseline design adopted for the proposed rolling stock uses PVC (Poly Vinyl Chloride) for the floor covering which has been used for over 3,000 rolling stocks in Metropolitan Tokyo area since year 2000.</p>	Requirements	TS Requirements	PVC	Slip resistance (C.S.R. value)	Dry: 0.75, Wet 0.62	Dry: 0.83, Wet: 0.54	Hardness measured by Durometer:	85 – 90	97 (considered equivalent with Shore A Hardness) per ASTM D2240	Resistance of chemicals:	Per JIS A 1454	Superior to JIS A1454	Tensile strength per JIS K 6251:	7.3 MPa	8.0 MPa	<p>allowed to propose any service-proven flooring material in compliance with the Employer's Requirements during Detailed Design stage.</p>
Requirements	TS Requirements	PVC																
Slip resistance (C.S.R. value)	Dry: 0.75, Wet 0.62	Dry: 0.83, Wet: 0.54																
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6	General Bid Bulletin No. 9, Annex "C", Item No. 11 Table 11-1	<p>We reviewed the above TS requirements and compared the above characteristics with the PVC floor covering material as summarized below:</p> <p>As you see the above, coefficient of friction value of the PVC has a little wider range between dry and wet as compared with the specified value; however, overall property of PVC has better material characteristics than the typical rubber type floor covering; therefore, we request the Employer to consider acceptance of the alternative floor covering material as above. Please consider the above request.</p> <p>We acknowledge receipt of additional information for acceleration requirements within Table 11-1 under GBB No. 9, Annex C, Item No. 11. We received this additional information and came to our opinion that this new acceleration requirements will result a need to increase the traction motor capacity to almost double of what currently planned under the original performance requirements. Our key concerns include:</p> <ol style="list-style-type: none"> 1. Size of traction motor will have to be too large so that the currently required wheelbase of 2,100 mm (TS 1.3.4 j) cannot be met. 2. Due to the traction motor capacity increase which will also require the size and weight increase of related equipment, train set weight of 270t/trainset per TS 1.7.2 cannot be met. 3. Currently, there is no traction motor existing in Japanese propulsion equipment suppliers' product line for EMU. The traction motor size to meet this acceleration rate may be used for a locomotive design; however, this only works with such heavier axle load than that of EMU's, thus, this will likely result in spinning of motor axle 	<p>The response to GBB 9, Annex "C", Item 6 (Section VI, Page TS-7, Clause 1.8.2 Performance Values, 2) and 6)) is revised to read as follows:</p> <p>"2) Acceleration: 3.3 km/h/s (0-30 kph) – thereafter, the Bidder shall make their own calculation of traction force in order to comply with the basic requirements in emphasis to Table 11-1-NSCR-ROL-00-0005-Acceleration graph)</p> <p align="center">xxx</p> <p>6) Severity of service: Shall meet conditions of continuous round trip of peak operation at loads of 2022 t/car or higher, without adverse effect to any system."</p> <p>Likewise, the response to GBB 9, Annex "C", Item 11 (Section VI, Page TS-61, Clause 11 Propulsion System, Sub-Clause 11.1 General, Paragraph 4)) is revised to read as follows:</p> <p>"Under condition of catenary voltage between 1,350 V dc, load at 20 t per vehicle and velocity from 0 to 30 km/h, the</p>

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		<p>wheels since it will way exceed the wheel/rail adhesion.</p> <p>With the above reasons, we respectfully request the Employer to delete the high acceleration rate requirements in Table 11-1 within GBB No. 9, Annex C, Item No. 11; specifically acceleration rate of 2.8 km/h/s for speed range of 31-50 km/h, 2.3 km/h/s for speed range of 51-97 km/h and 1.04 km/h/s for speed range of 98km/h – 115 km/h.</p>	<p>instantaneous acceleration shall not be less than 3.3 km/h/s. For the speed from 30 km/h to 120 km/h, the performance of acceleration shall be constant output in line with the appropriate optimal motor specifications to comply with the Employer's Requirements. The following information drawing NSCR ROL DD-0005.</p> <p style="text-align: center;">Table 11-1 (For reference only):</p> <table border="1" data-bbox="762 1294 1002 1883"> <thead> <tr> <th>Speed</th> <th>Acceleration (Approximate):</th> <th>Rates</th> </tr> </thead> <tbody> <tr> <td>0 to 30 kph</td> <td>3.3 km/hr/see (0.91 m/s²)</td> <td></td> </tr> <tr> <td>31 to 50 kph</td> <td>2.8 km/hr/see (0.79 m/s²)</td> <td></td> </tr> <tr> <td>51 to 97 kph</td> <td>2.3 km/hr/see (0.63 m/s²)</td> <td></td> </tr> <tr> <td>98 to 115 kph</td> <td>1.04 km/hr/see (0.29 m/s²)</td> <td></td> </tr> <tr> <td>116 to 120 kph</td> <td>0.25 km/hr/see (0.07 m/s²)</td> <td></td> </tr> </tbody> </table> <p>In the following conditions, the propulsion system shall have sufficient capacity. The Contractor shall simulate acceleration power consumption, regenerative power amount, RMS current, maximum drawn current during acceleration, maximum return current during regenerative braking to OCS and the temperature rise of each equipment etc. Total power consumption of a round trip (Tutuban-Malolos) for the following minimum conditions shall be submitted for review by the Engineer:</p> <ol style="list-style-type: none"> 1) Load condition: W3 loading and 20 t/car (round trip); 2) Wheel diameter: 820 mm; 3) In case of both 10 stations and 15 stations; 4) Max acceleration current: 3050 A; 	Speed	Acceleration (Approximate):	Rates	0 to 30 kph	3.3 km/hr/see (0.91 m/s ²)		31 to 50 kph	2.8 km/hr/see (0.79 m/s ²)		51 to 97 kph	2.3 km/hr/see (0.63 m/s ²)		98 to 115 kph	1.04 km/hr/see (0.29 m/s ²)		116 to 120 kph	0.25 km/hr/see (0.07 m/s ²)	
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			<p>5) IGBT 3.3 kV-1200 A or the performance of the motor current (2 Level) 46) Self-cooling system; 5) The maximum operational speed limit in the main line is 120 km/h; 6) Operational headway is 6-minutes; 7) The dwell time at each station is 30 seconds; 8) The dwell time at end stations is 120 seconds; 9) Indicative journey time for round trip, including 10 station dwells both directions, and end change dwell, is 73 minutes and 10 seconds, a commercial average speed of 62.2 km/h; 107) When 25% loss of the on-board traction motors total power, train can run all day; (with restriction on regenerative brake at a load above a certain load) 118) When 50% loss of the on-board traction motors total power, train can run 1 round trip; (with restriction on regenerative brake) 129) Catenary voltage: 1350 V (acceleration), 1650 V (regenerative); 1319) Acceleration use by simulation: the maximum performance; 144) Deceleration use by simulation: 3.0 km/h/s the maximum performance; 1512) Unladen mass: to be calculated by Bidder; 270 t; 1613) Start resistance: to be calculated by the Bidder; 3 kgff/t; 1714) Inertial mass: 10% of unladen mass (motor car), 5% of unladen mass (trailer car); 1815) Running resistance: 20.47+0.247 V+0.00373 V2</p>

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7	Section VI, Page TS-97, Clause 20.3 Design Qualification Testing, Item 8) General Bid Bulletin No. 6, Annex "A", Item No. 19 General Bid Bulletin No. 8, Annex "A", Item No. 19	We acknowledge the Employer's response to the parking brake testing requirement under Item #13 of General Bid Bulletin No. 6 and item #19 of General Bid Bulletin No.8. We; however, are not clear about how the measurement is to be made for actual force required to overcome the parking brake in a failure recovery situation on both level track and a 3.5% gradient. Please advise.	In addition, based on the above, the characteristics of the propulsion system shall be superior to the characteristics shown in the Table 11.1, Drawing No. NSCR-ROL-DD-0005." It is expected that the relevant technique to demonstrate the required measurement method to be proposed by the Bidder during appropriate stage of the Project. Thus, the following paragraph is added in TS Clause 1.8.5: "The parking brake force on an individual axle shall allow wheels to rotate during emergency train recovery (pushing/pulling of defective trainset)."
8	Section VI, Page TS-115, Clause 24.5 Main Special Tools and Diagnostic Test	Table 24.1 summarizes a list of special tools and diagnostic test equipment for light repair, electric shop, and final adjustment groups. We noticed that each group includes "Safety Device Tester" without any explanation. To include	Any equipment supplied under column "TD" of the referred Table having any safety device will be accompanied/equipped with a safety device tester by the Bidder.

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	Equipment	<p>correct equipment and tools to satisfy the Employer's intent, we would like the Employer clarify this Tester with the following:</p> <p>Purpose of this tester What safety devices to be tested? Which part (or function) of the rolling stock to be tested?</p> <p>Without any specific information for this safety device tester, we are not able to include an accurate cost information to those items. Please advise. [sic]</p>	
<i>Volume III, Part 3 – Conditions of Contracts and Contract Forms</i>			
9	Section VIII, Page PC-3, Clause 8.7 Delay Damages for the Works	<p>This clause specifies that delay damages for the Works shall be one tenth of a percent (0.1%) of the Contract Price per day for every Key Date, however, considering the magnitude of this project, such a high percentage, which theoretically speaking, just a hundred (100) accumulated days' delay in achieving K/D shall reach to the maximum amount of delay damages, is too severe for the Bidder to accept.</p> <p>Since the other similar contract in the Philippines to design, manufacturing, supply, testing, commissioning and delivery of rolling stocks, which is also funded by JICA, requires one two hundredth (0.005%) of the Contract Price per day as a delay damage, the Bidder requests the Employer to apply the same percentage to this project.</p>	<p>PC Clause 8.7 is amended as follows: "Twenty-seven thousandths of a percent (0.027%) One tenth of a percent (0.1%) of the Contract Price per day."</p>

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