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सं० ईएल/2.2.1

दिनांक 22.08.2012

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- मध्य रेलवे, मुम्बई सीएसटी-400 001
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- उत्तर मध्य रेलवे, ब्लाक ए-2, सुबेदारगंज इलाहाबाद - 211 033
- पूर्व रेलवे, फेयली प्लेस, कोलकाता-700 001
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- पूर्व तटीय रेलवे, चन्द्रषेखरपुर, भुवनेश्वर-751 023
- दक्षिण रेलवे, पार्क टाउन, चेन्नई-600 003
- दक्षिण मध्य रेलवे, रेल निलायम, सिकंदराबाद-500 371
- दक्षिण पूर्व रेलवे, गार्डनरीच, कोलकाता-700 043
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विषय: मॉडिफिकेशन संख्या RDSO/2010/EL/MS/0412 Rev. '0' दिनांक 22.08.2012.

संदर्भ: इसकार्यालय के दिनांक 22.08.2012 का समसंख्यक पत्र ।

उपरोक्त विषय पर इस कार्यालय के दिनांक 22.08.2012 का समसंख्यक पत्र आपके सूचना एवं आवश्यक कार्रवाई हेतु संलग्न है ।

संलग्नक : यथोक्त ।

(ए. के. गोस्वामी)
कृते महानिदेशक/विद्युत

प्रति :

1. सचिव (विद्युत), रेलवे बोर्ड, रेल भवन, नई दिल्ली-110 001 (कार्यकारी निदेशक विद्युत (चल स्टॉक) के ध्यानाकर्षण हेतु)
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 - उत्तर मध्य रेलवे, हार्लिंगरोड, इलाहाबाद-211 001
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वरि. मंडलविद्युतअभियंता/टीआरएस/ विद्युतलोक श्रेड

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- दक्षिणरेलवे, अरकोनम-631 001
- दक्षिणरेलवे, इरोड-638 002
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- दक्षिणपूर्वरेलवे, सांत्रागाची, हावड़ा-711 311
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- दक्षिणपूर्व मध्य रेलवे, बीएमवाईकाम्पलेक्स, भिलाई दुर्ग-490 025
- मध्य रेलवे, अजनी, नागपुर-440 008
- मध्य रेलवे, भुसावल-425 201
- मध्य रेलवे, कल्याण (महाराष्ट्र)-421301
- पूर्वरेलवे, हावड़ा-711 101
- दक्षिणरेलवे, रायपुरम, चेन्नई-631 001

5. मुख्य कार्यप्रबन्धक

- विद्युतलोकोवर्कषाप, पूर्वरेलवे, कचरापाड़ा, 24 परगना (उत्तर)-743 145 (प.ब.)
- विद्युतलोकोवर्कषाप, मध्य रेलवे, भुसावल-425 201
- कर्षणमोटरवर्कषाप, मध्य रेलवे, नासिक-422 101
- लोकोकैरिज एण्ड वैगलवर्क्स, पश्चिमरेलवे, दाहोद, डाक-फ्रीलेडगंज-389 160 (गुजरात)

6. वरि. मंडलविद्युतअभियंता / टीआरएस / विद्युतलोको शेड

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- पूर्व मध्य रेलवे, गोमो-828 401
- पूर्वरेलवे, आसनसोल-713 310
- पूर्वतटीय रेलवे, विषाखापत्तनम-530 001
- उत्तर मध्य रेलवे, फजलगंज, कानपुर-208 003
- उत्तररेलवे, गाजियाबाद-201 001
- उत्तररेलवे, लुधियाना (पंजाब)-141001
- उत्तर-मध्य रेलवे, झांसी-284 001 (उ.प्र.)
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- पश्चिमरेलवे, बड़ोदरा-390 002

6. वरि. मंडलविद्युतअभियंता

- कर्षणमोटरशॉप, उत्तर मध्य रेलवे, फजलगंज, कानपुर-208 003
- 7. उप मुख्य विद्युतअभियंता, पी.ओ..एच. शाप / लोकोवर्क्स
 - चारबागवर्कशॉप, उत्तररेलवे, लखनऊ-226 005
 - पीओएचशॉप, दक्षिणपूर्वरेलवे, खड़गपुर (प.ब.) 721 301
 - पीओएचशॉपदक्षिणरेलवे, पैराम्बूर, चेन्नई-600 038
- 8. मंडलविद्युतअभियंता, विद्युतरिपेयर शाप, टाटानगर-831002
- 9. कार्यकारीनिदेशक (निरीक्षण विद्युत), अ.अ.मा.स. निरीक्षणप्रकोष्ठ द्वाराबीएचईएल, पिपलानी, भोपाल-462 022
- 10. कार्यकारीनिदेशक, कैमटेक, भारतीय रेल, महाराजपुर, खालियर-474 020 (म.प्र.)
- 11. कार्यकारीनिदेशक, भारतीय रेलविद्युतइंजीनियरीसंस्थान, नासिकरोड, पोस्टबौक्स सं. 0233, नासिक-422 101
- 12. महानिदेशक (प्रिसिपल) रेलवेस्टॉफकालेज, बड़ोदरा-390 004

आपकेसूचना एवंआवश्यक कार्यवाईहेतुसंलग्नहै ।

संलग्नक : यथोक्त ।

(ए. के. गोस्वामी)
कृते महानिदेशक / विद्युत



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No. EL/3.2.19 (3-Phase)

Dated 22.08.2012

All Chief Electrical Engineers,

Chief Electrical Engineer,

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- Northern Railway, Baroda House, New Delhi-110001.
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- Eastern Railway, Fairlie Place, Kolkata -700 001.
- East Central Railway, Hazipur-844101.
- East Coast Railway, Chandrashekharpur, Bhubaneswar-751016.
- Southern Railway, Park Town, Chennai-600 003.
- South Central Railway, Secunderabad-500 371.
- South Eastern Railway, Garden Reach, Kolkata -700 043.
- South East Central Railway, Bilaspur-495004
- Western Railway, Churchgate, Mumbai-400 020.
- West Central Railway, Jabalpur-482001.
- Chittaranjan Locomotive Works, Chittaranjan-713331 (WB)

MODIFICATION SHEET No. RDSO/2012/EL/MS/0412 Rev. '0',
dated 22.08.2012

1.0 Title:

Provision of isolating cock for unloader valves (12) in E-70 brake system of 3-phase electric locomotives.

2.0 Object:

To provide isolating cock in unloader valve to prevent drop of MR air pressure from exhaust port of unloader valves, in case of its malfunctioning. This will overcome the problem of line failures of locomotives fitted with E-70 brake system due to MR air pressure leakage from the unloader valves due to malfunction of either read relay or unloader valves/ NRV.

3.0 Existing arrangement

Two air compressors of capacity 1750 LPM are provided to feed air through 02 check valves (NRV) into the main reservoir system. There is a safety valve in each of the compressor legs to protect the system in the event of a check valve blockage. There is one unloader valve (12) fitted with each compressor. Before starting of each compressor, EP valve on

pneumatic panel activates, which in turn, operates mechanical unloader valves to unload air pressure to avoid back pressure on compressors

In 3-phase locos of E-70 brake system unloader valves of Compressors are operated through a controlled port at which controlled pressure is admitted. The controlled pressure is made available via electro-valve (No. EP-33) which is driven by 'O' slot card of central electronics of locomotive. The controlled pressure for 02 unloader valves and auto-drain valve is made available through a single electro valve (EP-33). With the controlled air pressure of MR, this valve remains closed and there is no flow of pressurized air through the exhaust port. When the electro-pneumatic valve is depressurized, the unloader valve opens and air gets discharged from the exhaust port.

In case of failure of 01 unloader valve, it is not possible to isolate the faulty unloader valve as both unloader valves get isolated by disconnecting the electrical supply to EP valve (33).

4.0 Modified arrangement:

To avoid locomotive failure due to discharge of air through exhaust port of unloader, feasibility study has been done to check possibility to provide isolating cocks at the exhaust port of unloader. It has been observed that it is feasible to provide isolating cocks on the threaded end of exhaust port of both the unloader valve without much difficulty.

In case of drop of MR air pressure from exhaust port of unloader valves, failure can be avoided by closing Isolating cock provided on the exhaust port of unloader. It will stop prevent drop of MR air pressure from unloader valves.

In view of above, one isolating cock of size 3/4" with vent may be provided on the threaded end of exhaust port of each unloader. This isolating cock should be at unapproachable location to avoid inadvertent operation of the same.

The following instructions to be followed for safe operation of the Electric Locomotives:

- It is to be ensured by the Electric Loco Sheds that the Isolating Cocks type OPL (open parallel to line) provided on the exhaust port of unloader are in open position. These are to be sealed in open position before loco leaves the Sheds. Loco pilot should be advised to make entry in the log book, whenever seal is broken for operation of the cock in case of malfunctioning of unloader circuit.
- The Loco Pilots should also inform the TLC whenever the seal is broken and isolating cock is operated, in case of malfunctioning of

unloader circuit as the compressor will start under back pressure in this condition which may either lead to tripping of auxiliary convertor due to excessive high starting current drawn by the compressor motors or may have adverse effect on life of compressor motor. The isolating cock shall be normalized after rectification of unloader circuit.

5.0 Work to be carried out:

For provision of isolating cock, following works are to be carried out as per sketch enclosed as Annexure -I.

- Provide 01 nipple of dia. 1" & length 2" in the exhaust port of unloader.
- Provide 01 elbow of size 1" * 3/4" at the other end of nipple.
- Fit one nipple of dia. 3/4" and length 4" at the other end of elbow for unloader valve of CP-1 and length 2" for unloader valve of CP-2.
- Provide one isolating cock with vent of size 3/4". Directions of the isolating cocks are to be kept parallel to the track.
- Provide one 4" length pipe of size 3/4" at the other end of isolating cock to make sealing arrangement of the operating handle of the isolating cock.

Suitable supporting clamps are to be provided to hold the modified arrangement.

Ensure Control pipes of 8 mm size of unloader valves and auto drain valves are properly clamped to avoid breakage due to vibrations etc.

6.0 Application to Class of Locomotives:

3-Phase electric locomotives fitted with E-70 brake system.

7.0 Material Required:

- i) 2 nos. of nipples of size 1" and length 2"
- ii) 2 nos. of nipples of size 3/4" of length 2" and 4" each.
- iii) 2 nos. of elbow of size 1" x 3/4".
- iv) 2 nos. isolating cock 3/4" with vent.
- v) 2 nos. of threaded pipe of dia. 3/4" & length 4".

Note:- All material such as nipples, pipes & elbows are to be stainless steel. The isolating cocks and fittings should be procured from CLW approved sources for 3-phase electric locomotives only.

8.0 Material Rendered surplus: NIL

9.0 Reference :

- 9.1 RDSO letter no. EL/3.2.19/3-phase Dated 28.02.2012 addressed to CEE/NR.
- 9.2 Item no. 5 (iii) of XXXIV MSG's recommendations circulated vide Railway Board letter no. 2011/Elect (TRS)/138/2 dated 16.08.2011.

10.0 Modification Drawing:

Annexure- I

11.0 Agency of Implementation:

1. Electric Loco Sheds having 3-phase electric locomotives fitted with E-70 brake system.
2. POH and Workshops during overhauling of 3-Phase electric locomotive fitted with E-70 brake system.
3. Chittaranjan Locomotive Works, Chittaranjan West Bengal on newly build 3-phase electric Locomotives with E-70 brake system.

(A.K.Goswami)

for Director General/Elect.

Encl: Annexure -I

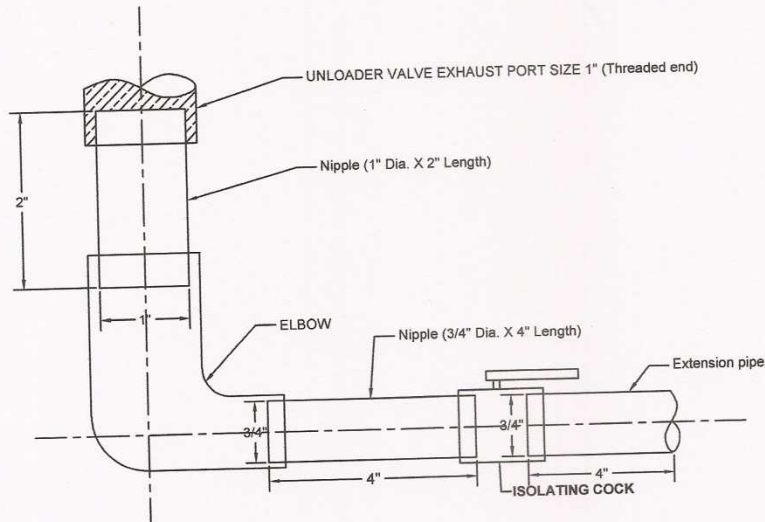
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(A.K.Goswami)

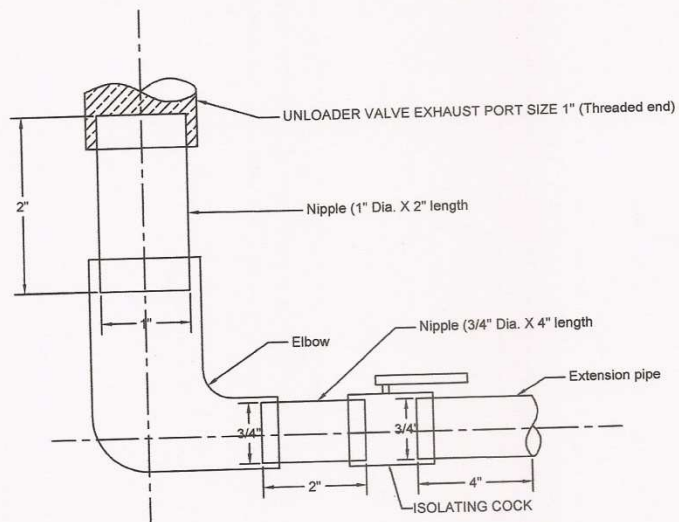
for Director General/Elect.

Encl: Annexure -I

Annexure-I



Unloader valve Isolating Arrangement for Compressor -1



Unloader Valve Isolating Arrangement for Compressor-2

Ref: Modification Sheet No. RDSO/2012LE/MS/0412, Rev. '0' Dt.22.08.12