CE Circular No.129

Sub:-Ballast procurement policy in NWR

(This Circular supercedes fully the Revised CE Circular No.117)

1. General:

Ballast should normally be taken through depot supply. Only in special cases where depot supply is not possible, cess supply may be resorted to which should not generally exceed 10% of annual requirement. Supply of on cess should be planned after obtaining approval from HQ i.e. CTE.

For the projects being executed by Construction/RVNL, the cess supply shall be bare minimum just to provide initial bed for track linking and the rest of the ballast has to be trained out from depots set up by them. *Construction will procure 2/3rd quantity and balance will be procured and inserted in track by open line organization, for which the funds will be made available by construction organization chargeable to project estimate.* Railway Board has also issued the directives for setting-up large mega depots so that ballast can be procured centrally and can be utilized as per the requirements. Keeping in view of the above, the procurement of ballast to be concentrated at depots with temporary relaxation for cess supply on case to case basis, with the approval of Chief Track Engineer. *Ballast chargeable to revenue should be procured by each division on yearly basis in accordance to instructions issued vide this office letter No. W/40/0/Vol-III dated 03-05-2010.*

The following guidelines, henceforth, to be followed for all future tenders to be floated for supply and training-out of ballast:-

2. Division wise policy for procurement of ballast:

2.1 List of the operative depots:

S.No.	Controlling Division	Name of Depot	Gauge
1	AII	Morthala	BG
2	-do-	Gangrar	BG
3	-do-	Ghasunda	BG
4	-do-	Dungarpur	MG
5	-do-	Kamli Ghat	MG
6	BKN	Bhawani Khera	BG
7	-do-	Hanumangarh	BG
8	-do-	Sadulpur	BG
9	-do-	Parihara	BG
10	-do-	BAP	BG
11	JP	Bandikui	BG
12	-do-	Nijampur	BG
13	-do-	Bassi	BG
14	-do-	Phulera	BG
15	-do-	Goriyan	MG
16	JU	Hanuwant	BG
17	-do-	Pipar Road	BG
18	-do-	Samdari	BG
19	-do-	Pokran	BG

2.2 New depots if required should be got approved from HQ giving full justification. New depot should not be opened unless approved by CTE. All depots shall have full rake ballast siding with direct entry and exist facility at both ends, so that placement and drawal of ballast hoppers rakes can be done directly. Stacking area to be developed for entire length of the siding with proper approach road for collection of the ballast.

2.3 MG depots as indicated above to be converted into BG depots during gauge conversion.

3. Availability of formation:

Formation of track shall be maintained as per Para 263 of IRPWM. No where low and inadequate cess width to be kept.

4. Assessment of ballast requirement:

The annual ballast requirement shall be assessed in advance in the month of November for the next financial year and tenders to be floated accordingly so that the contracts are finalized before the beginning of the financial year. The ballast assessment shall be done separately for making good the deficiencies as existing in the track, making good deficiencies arising out of overhauling, deep screening, to meet the extra ballast requirement due to change in track structure, for providing adequate cushions for machine tamping, extra cushion to convert SR/SWR track into LWR, to increase the max. perm. speed or to permit higher axle load wagons. The assessment of the ballast shall be done after taking the measurements at every one km and km wise details are entered in ballast assessment register to be maintained by PWI with details such as clean, caked up and total ballast cushion, quantity available per meter length of the track, deficiency etc. **The relevant sub-para(s) of 264 of IRPWM are to be followed.**

5. Specifications of track ballast:

The track ballast shall be procured confirming to specifications for Track Ballast-IRS-GE-I(Jan 2004) issued by RDSO under their letter No. RS/M/7/4 dated 25/27.06.2004 **with amendments up to the date of opening of tender.** The ballast should be hard, durable and as far as possible angular along edges/corners, free from weathered portions of parent rock, organic impurities and inorganic residues. Copy of specification attached as Annexure-I.

6. Depot supply:

6.1 For ballast collected in depot, instructions contained in Para 266 of IRPWM regarding register of ballast collection, training out, loading from the depots and quantity trained out should be adhered to.

6.2 Method of measurement:

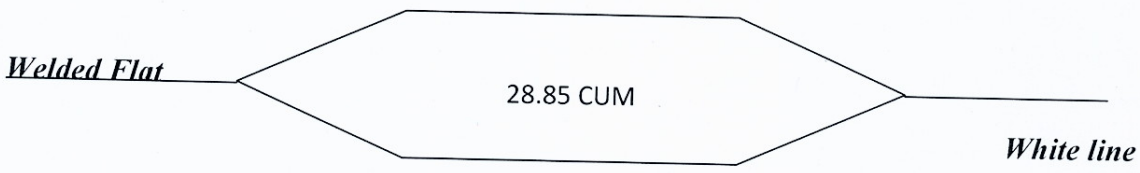
6.2.1 The mode of measurement will be stack measurement. The stacking area shall be level, firm and with good drainage. Each Depot shall further be divided into zones for the purpose of segregation of stacking and loading area by placing a physical barrier. Zones shall be further divided into plot. In each plot ballast shall be collected in stacks such that there is only one stack in a plot. The stack/plot would be the basic entity for measurement of the ballast supplied

6.2.2 The stacking area shall cover the entire ballast siding and supply shall be taken in the entire length as per the pre-decided stacking plots. For each depot, a depot sketch with the approval of Sr. DEN/DEN in- charge of the depot shall be drawn clearly showing the Zones and the plots with specific identification number for each plot. A copy of the depot sketch shall be available with divisional office, ADEN & SSE/JE in-charge of the depot.

6.2.3 Each plot shall be demarcated by erecting a vertical rail post of minimum 3 m heights above the ground level. Its length at the interval of 25 cm shall be marked by paint. Each stack shall be so formed that ratio of longer to smaller side does not exceed 2.5. The height of stack shall not be less than 1.0m. The side slopes of stack should not be flatter than 1.5:1 (Horizontal : Vertical) and the cubical content of each stack shall not be less than 30 cum. Supply in a zone shall be started only after certification by the ADEN in the ballast passing register based on his personal inspection that all the ballast earlier supplied in the zone has either been trained out or a separate stack has been formed out of left over ballast in the zone and measured and marked accordingly in the depot ballast register as well as in the measurement Book.

6.2.4 The testing of ballast should be got done at Railway's laboratory wherever possible and where it is not possible it should be got done at reputed test labs and as far as possible a representative of Railway should also be available at the time of testing.

6.2.5 At the time of start of first loading of ballast into wagons (Ballast hoppers) under a new contract, there should not be any disturbed stack in the zone. Ballast shall be loaded into wagons to their loading capacity and up to the line of loading marked with a continuous white paint inside the wagon. The white line marked inside the wagon is to indicate the level to which ballast should be loaded. The measurement of the ballast shall also be taken in the wagon. For this purpose, before commencement of first loading, the white lines should be painted inside the wagon at the level up to which ballast will be loaded. The cubical content in cubic meter corresponding to the top level of the ballast line shall be worked out as per the standard inside dimensions of the wagon. The cubical content in cubic meter corresponding to white line should also be painted on outside the wagon after joint verification by contractor(s) and Assistant Engineer. **The joint statement showing the dimension and cubical content shall also be test checked by DEN/Sr. DEN in-charge of depot before commencement of the first loading. This statement shall be entered in measurement book also and should be signed by contractor(s) or his authorized representative, permanent way inspector and Assistant Engineer and counter signed by DEN/Sr. DEN.**



(a) The payment shall be made for the gross measurement in stacks without any deduction for shrinkage/voids. However, shrinkage up to 8% shall be permitted at destination while verifying the booked quantities by the consignee.

(b) The measurement shall be taken for each wagon and recorded in measurement book. If any wagon is found to be under loaded i.e. not loaded up to the loading line marked on the wagon, the contractor(s) should load immediately. Detention of the wagons on this account will be counted in the loading time allowed to the contractor(s).

6.3 SAMPLING AND TESTING:

6.3.1 A minimum of 3 samples of ballast for sieve analysis shall be taken for measurement done on any particular date even if numbers of stacks to be measured are less than three.

6.3.2 The test viz., determination of Abrasion Value, Impact Value and Water Absorption should be got done in the Railway's laboratory wherever possible, in case of testing at other reputed test labs, the procedure/process for testing be advised in advance and if possible, a representative of the Railway should be available at the time of testing.

6.3.3 In order to ensure supply of uniform quality of ballast, the following norms shall be followed in respect of sampling, testing and acceptance.

(a) On supply of the first 100 cum, the tests for size, gradation, abrasion value, impact value and water absorption shall be carried out by Railway both in the field laboratory and in railway's laboratories. Further supply shall be accepted only after this ballast satisfies the specifications for these tests. Railway reserves the right to terminate the contract as per GCC at this stage itself in case the ballast supply fails to conform with any of the specifications.

(b) Subsequent tests shall be carried out as follows:

SN	Type of testing	Frequency
1	Size and gradation test	One for each stack.
2	Abrasion value, impact value and water absorption test	One test for every 2000 cum supply

(c) This sample should be collected using a wooden box of internal dimensions 0.3m x 0.3m x 0.3m from different parts of the stack.

(d) These tests shall be done for the purpose of monitoring quality during supply. In case of the test results not being as per the prescribed specifications at any stage, further supplies shall be suspended till suitable corrective action is taken and supplies ensured as per specifications.

(e) The above tests may be carried out more frequently if warranted at the discretion of Engineer in-charge or his authorized representative.

6.4 Loading time:

6.4.1 A rake of about 40 ballast hoppers shall be placed in the ballast depot siding. Contractor(s) should keep sufficient stock of ballast as per the loading arrangement. Contractor(s) should keep adequate loading arrangement to load the entire rake within 10 hrs of day time which will be free loading time (day time considered from sun rise to sun set).

6.4.2 An advance intimation of at least 6 hours for placement of rake shall be given by the Railway representative and the same should be entered in the register at least 6 hours in advance.

6.4.3 In case the rake is placed having composition of 30 ballast hoppers or less the free loading time will be 8 hrs (in day time). The loading time for a rake of more than 30 and up to 40 ballast hoppers shall be 10 hrs as mentioned above. The loading time for a rake of more than 40 ballast hoppers shall be 12 hrs.

6.4.4 Any delay in loading the rake up to the required line of loading into ballast hoppers within free loading time shall be on contractor(s) account and a penalty equivalent to demurrage charges prevailing as per Railway's rules during the currency of the contract shall be recovered from the contractor(s) for the entire rake of ballast hoppers. In general, Contractor will not be entitled for claiming waiver of demurrage charges, except on the specific recommendation of Engineer in-charge for which he has to apply duly giving the reasons for delay in loading.

6.5 On the day of measurement of fresh stacks, the approved depot/zone sketch shall be augmented by SSE/ JE (P.Way) in-charge of the depot with the following colours/hatching

(i) Stacks measured on date and yet to be paid for,
(ii) Stacks measured earlier and paid. This should include restacking of left over ballast in the depot after last training-out to be carried-out by the contractor (s) at his own cost. Besides signatures by SSE/ JE(P.Way), the sketch should be got signed by authorized representative of the contractor and ADEN, duly certifying that position of stacks on the date of measurement has been correctly incorporated. Availability of the aforesaid augmented depot sketch shall be a pre-requisite for processing of the bill for payment in the divisional office.

6.6 The measurement in depot has to be done by SSE/ JE(P.Way) in-charge of the ballast depot. The measurement along with the test results of each stack shall be entered in the measurement book. ADEN in-charge of depot will carry out the 100% test check. He will also ensure that mandatory testing of properties of the ballast has been done and the ballast conform to the specifications specified. Sectional Sr.DEN/DEN, who is the bill passing officer, shall exercise 10% test check on quantity and quality. At least 30-33% of the bills should be covered by the test check to be carried out at the DEN/Sr.DEN's levels. In case measurement are directly recorded by Asstt. Engineer 10% test check by DEN/Sr.DEN to be done on quality and quantity in each bill.

In special cases direct measurement of ballast in wagons may be resorted with the approval of Chief Track Engineer. In that case the DEN/Sr. DEN can also carry out test check enroute or at unloading point if he is unable to do at depot. For this purpose he shall advise ADEN in-charge of the depot in writing before departure of the rake. Test check in case of wagon shall be same as above in case of stack measurement

6.7 ADEN in-charge of depot shall fax the measurement details to Dy. CVO/Engg immediately once he has test checked stack measurements, made the bill and sent it to DEN/Sr. DEN for further necessary action. Dy. CVO/Engg or his representative may check the ballast stacks within the mandatory period of one week before training out. Dy. CVO/Engg or his representative may also check the measurement/quality of ballast in the hoppers, either at depot or enroute or just before unloading.

6.8 For training out of the ballast from the depot, a minimum period of one week after test check by ADEN in-charge of the depot is required to be lapsed before training-out of the ballast. For training out, the approval of Sr. DEN/DEN is to be obtained by ADEN in-charge of the depot in writing. In case DEN/Sr. DEN chooses to recommend training out earlier than a week, he may seek written approval of THOD through Sr.DEN/Co. with proper justification. A copy of such request should also be faxed to Dy.CVO/Engg.

6.9 The details shall be entered in the depot ballast register by in-charge SSE/JE (P.Way) of ballast depot with following details:

(i) Reference to agreement no.
(ii) Date of measurement
(iii) Stack No.
(iv) Measurements as recorded indicating the different dimensions and volume.
(v) Result of physical properties test.
(vi) Results of the quantity check and qualitative check.

There should be no overwriting in the register. If any correction is required, the old entry should be struck off by drawing a line and a fresh entry made and initiated. No blank line should be left while recording. The recordings done at a time should be properly boxed by drawing a line at the start and close of the measurements. All entries made in depot ballast register should be same as entered in Measurement Book, which shall form the basis for the contractors' bill.

6.10 No measurement should be done for part stack(s). After measurement of a stack is done, it should not be disturbed except for training out or for restacking of left out ballast in the depot after last training-out by hoppers.

6.11 The contractor or his authorized representative shall sign the ballast register as well as the measurement book in token of acceptance of measurements taken by ADEN. After the stack is passed and measured, the stack number should be clearly marked on the stack either by lime or by placing a board. In addition, lime should be sprinkled along all the edges of the stack to indicate that the stack has been accepted.

6.12 In another register i.e. the ground balance register, the quantity of ballast measured in each plot should be entered. After subsequent training out of ballast from a plot, the successive reducing balances in that plot should be reflected date wise. For the quantities loaded, the reference of challan no. should be shown. After the entire quantity in plot has been trained out, the ground balance should be reduced to zero and the plot shown as vacant. Further stacking at the plot can start only after permission by ADEN, when training out of entire ballast in the depot except small quantity of ballast left out after last training-out by hoppers, which should be restacked properly and measured.

6.13 The bills for payments to the contractors should be prepared on the basis of the measurements recorded in the measurement book. The frequency of the preparation of bills can be flexible depending upon the quantities supplied by the contractor, his financial soundness and administrative conveniences etc. The attempt should be to pay the contractor(s) regularly with about 2 bills per month.

6.14 Procedure of movement of ballast rakes and accountal:

(a) The office of SSE/ JE(P.Way) in-charge shall prepare the ballast challans on the prescribed performa (Form E-1332) in 6 copies. One copy shall remain in the file of the concerned SSE/ JE(P.Way) in-charge as the office copy, one copy shall be handed over to the ASM of station of ballast depot, who shall hand it over to the guard working on the ballast train. The remaining 4 copies of challans shall be later got verified from the consignee SSE/ JE(P.Way) incharge. One copy shall be retained by the consignee, one copy shall be retained by incharge ADEN, one copy sent to the office of Sr. DEN and the last copy sent along with the final bill of the concerned supplier.

(b) The guard working the ballast train shall hand over the copy of the challan given to him to the SSE/ JE(P.Way) where the ballast is unloaded. It is the responsibility of the consignee or his representative to make contact with the guard for collecting the copy of challan. In case, the consignee or his representative does not collect the copy of the challan, the guard shall hand it over to the SM of any of the either end block station where the ballast train has unloaded ballast. The SM in turn shall send a control message to engineering control that the ballast challan is in his custody and has not been collected by the SSE/ JE(P.Way) in whose jurisdiction ballast has been unloaded.

(c) After receiving the ballast challan, if the consignee finds that the quantities entered for any wagon(s) in the ballast challan do not match the loading condition of the wagon actually, he shall note the actual quantities on the copy of the challan, intimate the consignor, his senior and consignor's seniors right away.

(d) Similarly, in case a consignee is not able to unload any or some wagons due to whatsoever reason and the ballast in these wagons is sent back along with the ballast train, he shall note such quantities in the copy of challan. This copy of the challan shall thus help in verifying the ballast challans.

(e) The challans finally verified, test checked and accepted by the receiving SSE/ JE(P.Way) concerned and the contractor or his authorized representative shall then be sent to the ADEN in-charge. **The final payments for supplying and loading shall be based on the lower of the measurements viz the measurement taken at the originating depot and the measurement by the consignee.**

(f) In case, there is a dispute regarding the quality of ballast between the receiving ADEN and ADEN in-charge of the ballast depot at which ballast is loaded, the matter should be referred to DEN/Sr. DEN in-charge of the depot whose decision as regard the quality shall be final. In all such cases, the hoppers/wagons should not be unloaded directly on to the track but shall either be kept under load for inspection of the DEN/Sr. DEN or the ballast shall be unloaded and kept separately in stacks at some convenient place to facilitate inspection by DEN/Sr.DEN.

(g) Within 1 day of a DMT having been dispatched, SSE/JE/P.Way (consignor) shall send 4 copies of ballast challans for verification. The consignee SSE/ JE(P.Way) shall promptly verify such ballast challans. These 4 challans shall be disposed in the manner mentioned in Para 6.14(a) above.

7. Management of ballast rakes:

7.1 A trained mechanic cum blacksmith preferably from mechanical department chargeable to engineering department may be kept in each depot for ensuring proper door opening and closing, greasing, attending to small repairs in consultation with Sr. DME of the division.

For this if required, work charged posts for the staff and also provision for consumables may be kept sufficiently at each depot. The blacksmith shall accompany the ballast rake. It will be desirable that a crew rest van/second class coach is made a standard part of ballast rake composition to provide travelling and resting facility for blacksmith, relief guard and driver, trackmen required for unloading and other relevant staff.

7.2 There shall be a temporary site office, crew rest room, store room with required infrastructure at each mega ballast depot. The site office should have a computer, fax, printing facility and DOT/Railway telephone. However the above facilities may be dispensed with in case of depots which are created on short term basis.

7.3 Timely examination of ballast hopper by TXR at nominated places preferably at depot itself is to be ensured. The ballast rake must be manned by guard. The break power must be checked by driver.

7.4 The timely intimation for placement of empty rake as per the contractual condition shall be given to the contractor or his supervisor representative to keep the ballast and loading arrangements in position so that loading can be completed within the free time allowed.

7.5 The requirement of ballast to be unloaded in each TP shall be assessed correctly by SSE/ JE(P.Way) of the section in advance and clear signals should be shown to driver to stop at exact required locations.

7.6 The proper functioning of doors i.e. proper closing and easy opening should be ensured in advance. For any deficiency like not closing of the door or not opening of the door should be attended in advance and if still some deficiencies is left, the SSE/JE (P-way) depot shall be held responsible.

7.7 The SSE/ JE(P.Way) in whose jurisdiction ballast is to be unloaded should explain in advance to mate, keymen, trackmen, driver and guard about the location and safe working of ballast train before entering into block section for unloading from the adjacent station. Door flats of ballast hoppers should be opened slowly to avoid sudden discharge and thereby heaping of ballast. SSE/ JE(P.Way) must move along with ballast train while ballast is being unloaded and instruct the staff on train as per need using walkie-talkie sets. The ballast train shall not be moved at a speed higher than 8 to 10 kmph while unloading the ballast. The ballast train shall move only in one direction and no pushing back should be done. The ballast train shall not be stopped while unloading is in progress. In case, due to unavoidable circumstances, the ballast train has stopped in the process of unloading, it should not start unless the ballast is cleared from the track and there is no infringement for its movement. Ballast shall not be unloaded on and near level crossing, point and crossing and girder bridges. The ballast train should not work after sunset and on foggy days. Uneven unloading must be avoided.

8. Cess Supply:

8.1 For ballast collection along cess and its spreading in track, instruction as given in Para 267 of IRPWM shall be adhered to.

8.2 Stacking area should be level, firm and with good drainage. Written permission for stacking shall be given duly certified by ADEN (test checked at times by DEN/Sr. DEN) on the ballast register. Each stack shall be so formed that ratio of longer to smaller side does not

exceed 2.5 except for areas where there is constraint of land width in which case the ratio up to 3.5 may be permitted. The height of stack shall not be less than 1.0 m except in hilly areas where it may be 0.5m. The height of stack shall not be more than 2.0m. The side slopes of stack should not be flatter than 1.5:1 (Horizontal : Vertical) and the cubical content of each stack shall not be less than 30 cum in plain areas and 15 cum in hilly areas.

8.3 The plots for ballast stacks should be selected by SSE/ JE(P.Way) in-charge and approved by ADEN and should be on level ground and at such locations from where lifting and leading of the ballast into the track requires minimum effort. The supply contractor should level the area (if required) at his own cost before stacking the ballast.

8.4 The quantity of ballast required in a TP length should be properly assessed in advance and advised to the contractor to avoid surplus collection in one TP length and less than required in another which may result in unnecessary lead.

8.5 The collection and stacking of ballast should be completed in all respect in a TP length before measurements are taken i.e. measurement for ballast supplied in a particular TP length shall be taken only once during the currency of a contract. Further collection, stacking and measurement of ballast for one block section must be completed before order for putting into track can be issued by DEN/Sr.DEN.

8.6 In case of cess supply, cess supply sketch similar to depot sketch shall be drawn as mentioned above by SSE/ JE(P.Way) in-charge of the section. The diagram shall reflect all the stacks available per block section by clearly indicating the following with different colour/hatching.

(a) Stacks measured on date and yet to be paid for.
(b) Stacks measured earlier and paid.
(c) Stacks where the supply is in progress. These diagrams shall also be signed by contractor's representative and ADEN duly certifying that position of stacks on the date of measurement is correctly incorporated in the diagram. Availability of cess supply diagram shall be pre-requisite for processing of the bill for payment in the Divisional Office.

8.7 SSE/JE(P.way) will take the measurements, ADEN will carry out 100% test check and sectional Sr.DEN/DEN, who is the bill passing officer shall exercise 10% test check on quantity and quality. At least 30-33% of the bills should be covered by the test check to be carried out at the DEN/Sr.DEN's levels. In case measurement are directly recorded by Asstt. Engineer 10% test check by DEN/Sr.DEN to be done on quality and quantity in each bill.

8.8 For the supplies taken along the cess, ballast passed by the AEN should not be put into the track till the bill is passed by the Sr. DEN/DEN and a lapse of further 14 days and the ballast is accounted for in the ballast ledger by the subordinate in-charge. ADEN in-charge of the section shall fax the measurement details to Dy.CVO/Engg. immediately, once he has test checked the stack measurements, made the bill and sent to sectional DEN/Sr.DEN for further necessary action. Dy.CVO/Engg. or his representative may check the ballast stacks, within the mandatory period of 14 days before commencement of spreading of ballast into the track. In case DEN/Sr.DEN chooses to recommend spreading of ballast earlier than 14 days, he may seek written approval of THOD through Sr.DEN/Co. with proper justification. A copy of such request should also be faxed to Dy.CVO/Engg.

8.9 There should be a buffer of at least one block section between the location of collection and spreading of ballast. Any deviation of the stipulations shall not be allowed except by specific written approval of the Sr. DEN/Co. for the reasons to be recorded in writing and if he is the bill passing officer for payments, then the deviation being approved by CTE.

9. Delegation of power for management of ballast:

9.1 Concerned Sr DEN/ DEN shall deal with management of ballast procurement including Estimating, vetting, tendering and finalization of Tenders contract management for depots and cess supply.

9.2 The distribution of the ballast within the division and outside division will be coordinated by Sr.DEN (Co.) in consultation with CTE. He will also be responsible for overall planning of ballast requirement, distribution of quantities to various depots and cess supply. He shall also control the availability of funds for ballast, both under revenue and track renewal/special track works and shall coordinate the overall movement of the ballast trains from depot.

10. This circular is issued based on the Railway Board's letter no. 2006/CE-II/MB/2 dated 25.05.07, 15.01.13 and Railway Board's letter no. 2011/CE-I/CT/0/17 dated 03.02.14 by incorporating other special instructions as applicable on NWR for better management of the ballast procurement and training out. The instructions must trickle down to the lowest level and the copy of the same shall be available with all concerned officials.

(No. W/432/0/CE dated 08.07.2014)

08/07/14

(Pankaj Jain)
Principal Chief Engineer

C/- Sr. DENs (Co.)/AII, BKN, JP & JU : for information and necessary action.
C/_ Principal ZTS/Udaipur: for information and necessary guidance.
C/- CAO/C/NWR/JP: for information and necessary action.