Project Title: Assessment and advise for mechanical integrity of 8T C.S. Gear components at Bhagabandh Colliery, BCCL.	**Executive Summary:** With reference to the Work Order no. BH/Eng./423, dated June 11, 2018 the non-destructive examinations of vital components of mine winding system and other critical items used in mine operation were conducted at Baghabandh Colliery, P.O. Kusunda, BCCL for assessment of their quality for further use in the installation. Cage suspension gear system of mine winding system equipment is used for safe hoisting of man, machine & material. A number of parameters play a vital role in deterioration of these items throughout their service lives. For surface and subsurface imperfections, Magnetic particle crack detection (MPCD) was conducted, whereas, Ultrasonic flaw detection (UFD) for assessment of internal flaws. Results of non-destructive examinations are described in Chapter 3 and their analysis in the next chapter. Condition of most of vital components cage suspension system, winding engine and head gear pulley shaft were found satisfactory except some items which are mentioned in the list of field observations given in Chapter 3. On the basis of this study it is recommended that the materials in good condition may be safely used in the installation for next schedule date of examination after getting permission from competent authority.
Project No. – SSP/386/2019-20.	