

PROJECT CONTROL DOCUMENT – TRP 0009

PROJECT TITLE: Nitrogen Removal in EAF Steelmaking by DRI Fines Injection

PROJECT DESCRIPTION: The objective of the project is to develop a technique for nitrogen removal from liquid steel in the EAF by the injection of DRI (direct reduced iron) fines. The DRI fines containing significant quantities of carbon and oxygen can be generated directly from DRI processing or by attrition in the transport and handling of DRI. Experiments will establish the relationship between solid injection rates, particle size, DRI composition, lance depth, sulfur content, temperature and beginning and ending nitrogen levels in the molten steel. A mathematical model will be developed to determine the benefits of the new injection practices. Plant trials will be planned in Phase 2 if the model indicates the practices are economically attractive.

PRIMARY RESEARCH ORGANIZATION(S):

McMaster University
Department of Materials Science and Engineering
Hamilton, Ontario, Canada

PRINCIPAL INVESTIGATOR(S): Dr. Gordon Irons

PROJECT PARTICIPANTS: Dofasco
Gallatin Steel
Ispat Inland Inc.
Midrex
Steel Dynamics

PROJECT DURATION: 29 Months

PROJECT START - END DATE: 11/1/01 – 3/30/04

PROJECT BUDGET (excluding AISI Project Mgmt.): \$177,570

TECHNICAL PROJECT MANAGER: W. Obenchain – AISI, Washington DC

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