Scheduling for Polaroid film manufacturing movements

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This paper presents a scheduling model for Polaroid films. Polaroid films are generally produced from the front-end plant with the key operation and back-end plant which has relatively lower value. After the completion of the front-end plant, intermediate films are transferred into the back-end plant where cheep labors are available with being wrapped in a core. A key issue in Polaroid film manufacturing movements is to minimize redundant cores for intermediate films. The proposed model consists of a manufacturing part and a supply chain part. The manufacturing part is concerned with producing intermediate films in front-end plants. The supply chain part is concerned with transporting cores wrapped intermediate films to back-end plants. It is also concerned with transporting empty cores to front-end plants. This paper models mixed integer linear programming (MILP) formulation and presents examples to illustrate the proposed model.