July 15, 2008

Re: Mark Raabe, Thai 66; Engineering Projects in Yasothon Province

The following are a series of photographs related to engineering projects in Yasothon Province during my tenure as a Peace Corps from Oct. 1979 to Oct. 1981. I participated in the design of these projects. The projects were constructed in 1982, after my COS.

I do not believe a Peace Corps volunteer was present in Yasothon during the period of construction. Jim Ogata visited one of the projects in March 1982, after completion of construction activities, and then again in October 1982. Jim sent me a series of photographs related to Project #1. A few of the photographs from Project #2 were sent to me in 1982 by my former co-workers. The remaining photographs were taken by me when I visited Yasothon during the dry season in 1985.

Project #1 was sponsored by the Department of Community Development, and Project #2 was sponsored by the Department of Accelerated Rural Development. Construction supervision for both projects was conducted by the Department of Accelerated Rural Development.

Overview of Project #1: The project consists of a dam and spillway over the Deer Creek. The purpose of the project was to impound water for use in irrigation. This creek is one of many tributaries of the Moon River and is located on the edge of the floodplain (of the Moon River).

The dam consisted of an earthen embankment approximately 100 meters long. The design of the spillway is a drop-inlet chute with stilling basin. An irrigation canal was constructed adjacent to the reservoir and located outside the floodplain. The irrigation system consists of a pump house, reinforced concrete inlet and concrete-lined channel.

The design of the dam and spillway addressed three conditions: 1) discharge from the reservoir to the creek below during the early stage of the rainy season; 2) the swelling of the Moon River during the latter stage of the rainy season, resulting in water flowing upstream and into the reservoir and final flood stages higher than the top of the dam; and 3) draining of the flood stage of the Moon River through the spillway.

The project was completed in March 1982. I visited the site with my former co-worker during the dry season in 1985.

Overview of Project #2: The villagers adjacent to a natural lake (name no longer remembered) requested the government to construct a dam to raise the lake level and provide a year-round road connecting either side of the lake. Historically, a dam was constructed by the local villagers but was subsequently destroyed by flooding. [Note: The previous dam did not include a spillway.]

The lake lies within the drainage basin of the Moon River. The design elevation of the top-of-dam was based on data obtained from long-time residents of the village. A topographic survey of the lake and adjacent areas was conducted to determine the proposed normal high water elevation of the new reservoir.

The project consisted of an earthen embankment approximately 1.5 km long capped with a roadbed consisting of laterite. The spillway consisted of a box inlet drop spillway. The design of the bridge spanning the spillway consisted of reinforced concrete with two support piers.

The design of the dam and spillway addressed two operating conditions: 1) discharge from the new reservoir to the creek below, resulting from accumulation of water within the drainage area of the

reservoir; and 2) flood stage of the Moon River during the latter stage of the rainy season, resulting in water flowing upstream and into the new reservoir.

The project was completed in 1982. I visited the site with my former co-worker during the dry season in 1985. He indicated that the dam had never been breached.

Project #1, sponsored by the Department of Community Development.

Photo #1: Box inlet spillway on a small tributary within the floodplain of the Moon River.

Date of Picture: March 1982

Photo provided by Jim Ogata.

Project #1, sponsored by the Department of Community Development.

Photo #2: Inlet stilling basin for irrigation system.

Date of Picture: Oct. 1982.

Photo provided by Jim Ogata.

Project #1, sponsored by the Department of Community Development.

Photo #3: Head end of concrete-lined irrigation channel. The inlet stilling basin is in the background and the pumphouse is to the right.

Date of Picture: Dry season, 1985.

Photo provided by Mark Raabe.

Project #1, sponsored by the Department of Community Development.

Photo #4: Section of the concrete-lined irrigation channel.

Date of Picture: March 1982.

Photo provided by Jim Ogata.

Project #1, sponsored by the Department of Community Development.

Photo #5: Spillway and dam are completely submerged, due to flooding of the Moon River.

Date of Picture: October 1982.

Photo provided by Jim Ogata.

Project #2, sponsored by the Department of Accelerated Rural Development.

Photo #1: The elevation of this lake was to be increased through the construction of a dam. A dam was previously constructed by local villagers but without a concrete spillway. The previous dam was subsequently destroyed during an ensuing flood event.

Date of Picture: 1982, probably during the rainy season following completion of construction activities.

Photo provided by former co-worker of Mark Raabe.

Project #2, sponsored by the Department of Accelerated Rural Development.

Photo #2: Box inlet drop spillway prevents erosion of the earthen embankment during flood events.

Date of Picture: Dry season, 1985.

Photo provided by Mark Raabe.

Project 2, sponsored by the Department of Accelerated Rural Development.

Photo 3: Laterite roadbed atop the earthen embankment. The earthen embankment remained structurally sound despite erosion from water buffalo at the toe, and lack of maintenance of the roadbed.

Date of Picture: Dry season, 1985.

Photo provided by Mark Raabe.

Project #2, sponsored by the Department of Accelerated Rural Development.

Photo #4: Water is flowing upstream into the reservoir (on left), due to flooding of the Moon River. Note: Villagers are gathered around the box inlet with nets to catch fish.

Date of Picture: 1982, probably during the rainy season following completion of construction activities.

Photo provided by former co-worker of Mark Raabe.