Si $\mathcal{E}_p\{(k(x,x))^{1/2}\} < \infty$; entonces $\mu_p \in \mathcal{F}$.

El operador lineal $T_p f = \mathcal{E}_p\{f(x)\}$; $\forall f \in \mathcal{F}$, es acotado dado que:

$$|T_p f| = |\mathcal{E}_p\{f(x)\}| \leq \mathcal{E}_p\{|f(x)|\} = \mathcal{E}_p\{|\langle f, \varphi(x)\rangle_{\mathcal{F}}|\}$$

Desigualdad de Jensen

$$\Rightarrow \mathcal{E}_p\{|\langle f, \varphi(x)\rangle_{\mathcal{F}}|\} \leq \mathcal{E}_p\{\|f\|_{\mathcal{F}} \|\varphi(x)\|_{\mathcal{F}}\}$$

$$= \mathcal{E}_p\{\sqrt{k(x,x')}\, \|f\|_{\mathcal{F}}\}$$

$$|T_p f| \leq \mathcal{E}_p\{\sqrt{k(x,\dot{x})}\, \|f\|_{\mathcal{F}}\}$$

Por ende existe un $\mu_p \in \mathcal{F}$ tal que $T_p f = \langle f, \mu_p\rangle_{\mathcal{F}}$

Si $f(x) = \varphi(x) = k(x,\circ)$:

$$\mu_p(x) = \langle \mu_p, k(x,\circ)\rangle_{\mathcal{F}} = \mathcal{E}_p\{k(x,x')\}$$